

Installation Guide

Manufacturing Operations Management | Technical

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Introduction

Overview

SYSPRO's Manufacturing Operations Management (MOM) solution provides complete manufacturing lifecycle management from planning, scheduling, publishing, collecting, tracking and analyzing to optimize and improve end-to-end manufacturing operations.

Used in combination with SYSPRO's ERP, this Manufacturing Execution System (MES) offers a unique level of delivery, cost and quality control of manufacturing operations for job shop, batch production, production line and mixed mode environments, helping to increase productivity, minimize loss and lower production costs.

SYSPRO's MOM is made up of the various components:

- Visual APS Server/Desktop Client
- MOM Website
- SmartLYNQ Website

Visual APS Desktop Client

The Visual APS Desktop Client can be installed locally or on an application server supporting either Citrix or Terminal Services. In situations where Visual APS will be accessed by users in remote locations, the application should be run over Citrix or Terminal Services. Visual APS is used by your production planners for scheduling and publishing purposes. Users can connect to Visual APS using either Windows or SQL authentication. SQL permissions can be granted using the LYNQ application role, database roles, server roles or with explicit SQL permissions. For users outside of the corporate network, SQL authentication must be used if they are not accessing the application on a Citrix/Terminal Server within the same corporate network where SYSPRO is installed.

MOM Web Site

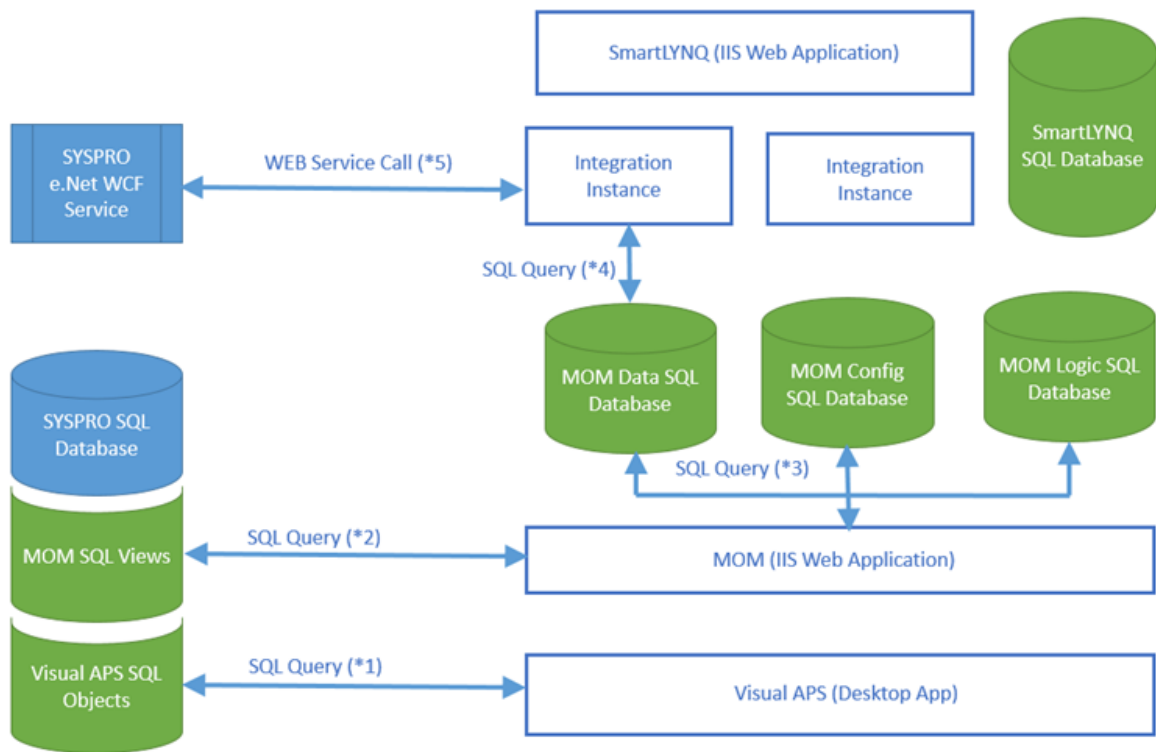
Manufacturing Operations Management (MOM) requires an instance of the application to be installed per SYSPRO Company. Users connect to the Manufacturing Operations Management site using windows authentication from their web browser. Each instance of Manufacturing Operations Management is configured for a specific SYSPRO company and it is recommended to install a separate instance for testing/training purposes in production environments. Users accessing the Manufacturing Operations Management site outside of the corporate network will need to enter their domain and username credentials. Application rights are configured through the Manufacturing Operations Management application.

SmartLYNQ Website

Manufacturing Operations Management (MOM) is a value added application powered by LYNQ. Seamless integration with SYSPRO ERP is achieved using SYSPRO's e.net objects in combination with a web application called SmartLYNQ. In addition SmartLYNQ maintains settings for the configuration of the Manufacturing Operations Management document library. This application should be made available to system administrators and to any user that will maintain the integration of Manufacturing Operations Management to SYSPRO. SmartLYNQ communicates with SYSPRO via the SYSPRO WCF Services. This service must be installed prior to installing SmartLYNQ. Users connect to the SmartLYNQ site using windows authentication from their web browser. Users accessing the SmartLYNQ site outside of the corporate network will need to enter their domain and username credentials.

Integration Overview

The image below describes the flow of information between **MOM** and **SYSPRO**.



Visual APS, the desktop application reads data directly from **SYSPRO** through a set of **SQL Views**. If for example you open **Visual APS**, the **Jobs** that appear in the Task Panel are read in instantly through SQL views. **Visual APS** has its own set of tables for storing data local to the application. For example, company-wide configuration settings, detailed scheduling information, material requirements. **Visual APS** does not maintain its own independent database. When **Visual APS** is installed and on first connection to a **SYSPRO** company, the necessary SQL objects are created. Objects include tables,

views, stored procedures and functions. All **Visual APS** SQL object names are prefixed with Lynq_VP. Objects sit within the **SYSPRO** database. **Visual APS** will write back some information to the Work In Progress Master Table such as start and end dates of the job and this is all done via the logic within SQL. At this point **Visual APS** is not calling the e.Net WCF business objects.

SYSPRO Tables that are referenced by **Visual APS** views can be **Inbound** or **Outbound**. Inbound refers to the data that is read into **MOM** and outbound updates **SYSPRO** tables.

Data Tables	SYSPRO Datasource Objects	Direction
Work Centers	[BomWorkCentre]	Inbound
Machines	[BomMachine]	Inbound
Inventory Items	[InvMaster]	Inbound
Inventory Locations	[InvWhControl]	Inbound
Item-Inventory	[InvWarehouse]	Inbound
Forecast Order Lines	[MrpForecast], [ArCustomer], [InvMaster]	Inbound
Sales Order Lines	[SorDetail], [SorMaster], [ArCustomer]	Inbound
Purchase Order Lines	[PorMasterDetail], [PorMasterHdr], [ApSupplier]	Inbound
MRP Purchase Order Lines	[MrpSugReqDetail], [ApSupplier]	Inbound
Routings	[BomOperations]	Inbound
Routing Operations	[BomOperations]	Inbound
Routing Materials	[BomStructure]	Inbound
Production Orders	[WipMater], [WipMasterSub], [InvMaster], [ArCustomer]	Inbound/Outbound
Production Order Operations	[WipJobAllLab], [WipMaster], [BomMachine], [BomWorkCentre]	Inbound/Outbound
Production Order Materials	[WipJobAllMat]	Inbound
MRP Orders	[mrpMaster]	Inbound
MRP Order Operations	[MrpSugJobAllLab]	Inbound
MRP Order Materials	[MrpSugJobAllMat]	Inbound
Workforce	[BomEmployee]	Inbound
Production Order Operation Tasks	[WipJobAllLab], [WipMaster], [BomMachine], [BomWorkCentre]	Inbound

MOM reads data via the SQL views, some views sit within the **SYSPRO** database, but **MOM** does have its own local database. This database can be split into three types of databases: **Data** (Transactional data), **Configuration** data or **Logic** data. When installing **MOM** for non-demonstration purposes, three separate **MOM** databases are created. When selecting the option to install **MOM** for demonstration purposes all SQL objects are created within the **SYSPRO** company database. **MOM** SQL objects are prefixed with **LYNQ_ME**. Five business objects are used for the integration between **SYSPRO** and **MOM**. By default, transactions created in **MOM** via the **Workbench** or via the **Timesheet** function are created with a status of unposted. Within **MOM**, the manual approval process changes the status of a transaction from **Unposted** to **PendingPosting**. All transactions with a status of **PendingPosting** will be considered ready for synchronization to **SYSPRO**. Synchronization to **SYSPRO** is executed via the business objects. From advanced settings> Definitions > Diversions, the default approval status

can be set to submitted (unposted), approved or excluded for each individual diversion type.

Refer to the table below which shows how the triggers in MOM update the Work in Progress and Inventory movement business objects.

Work in Progress updated by Business Objects (Outbound)		Triggered by MOM by posting
WIPTLP	WIP Labor Posting	Labor, Quantity, Status, Scrap Transactions
WIPTJR	WIP Job Receipt	Quantity Transaction on last operation of type run
WIPTMI	WIP Specific Issues	Material Issue or Kit Issue Transaction
INVTMO	Inventory Movement (Warehouse Transfer Out)	Scrap Quantity on last operation of type run (if enabled)
INVTMI	Inventory Movement (Warehouse Transfer In)	Scrap Quantity on last operation of type run (if enabled)

 **Note:** SQL views are configured as read with no lock against the SYSPRO Database.

The SmartLYNQ install also has its own database and its reads the data from the MOM Data database. It looks at transactions that need to be posted. It will use the configuration of the integration instance and call the WCF Service based on a parameter set and the business object will handle the actual posting. The SYSPRO Web Service then updates SYSPRO and the cycle starts again.

Product Versions

The initial install of Manufacturing Operations Management (MOM) uses the offline installation wizard and the base versions built into this installation wizard. Currently they are:

- Visual APS Build 9.7
- MOM Build 3.8
- Smart LYNQ Build 5.4

The offline installation wizard can be downloaded from the **SYSPRO Learning Channel**.

It is important to note that if you are using your installed version of MOM in combination with the Training Guide, you must update all features of your MOM installation to versions listed below:

- Visual APS Build 9.16
- MOM Build 3.17
- Smart LYNQ Build 5.7

Hotfixes and service packs should be applied frequently using the **Product Updater**. The **Product Updater** requires internet connectivity. Periodically, improvements are made to the **Product Updater** and you can be requested to download a newer version of this file.



Note:

Please note that the upgrades available for Manufacturing Operations Management are not dependant on the version of the **Product Updater** you are running.

This guide is for a first time installation of Manufacturing Operations Management.

If you have installed an earlier versions of LYNQ MOM, this must be uninstalled using the **Product Updater** prior to re-installation of SYSPRO Manufacturing Operations Management.

What's new in MOM

With this release of the software, improvements have been made to better help manufacturers:

- Measure performance to help drive toward world class standards of operation
- Increase productivity and lower costs by minimizing loss within the business
- Optimize operations through the provision of a fully integrated solution which can schedule, publish, collect, track, analyze and improve production efficiencies
- Connect machines and other devices to help digitize the factory to remain competitive supporting Industry 4.0

The following is a summary of the new features and bug fixes included in this release:

Improved user experience

- Improved look and feel with hyperlinks for faster navigation
- Simplified user maintenance and access control
- Enhanced resource maintenance
- User specific shortcuts for quick linking to internal & external sites
- Improved management messaging
- Extended access control using workgroups
- Ability to set file size limits on document uploads
- Ability to attach documents to employee and equipment records
- New functionality to check whether installation has any customization developed by LYNQ
- Enhanced online help with video tutorials

Extended finite capacity scheduling & shop floor publishing

- New planning management dashboard
- Enhanced shift definition for determination of planned hours
- Published schedule with progress tracking
- Improved resource availability tracking
- Order issue tracking with enhanced visibility
- New online loading visibility and loss analysis
- New functionality to auto schedule from the list by operation view
- New functionality to allow editing of operation details on the fly
- New functionality to identify and reschedule late operations
- New "show detail" option when right clicking on a job/operation
- Ability to set a sequence number against the machine
- New functionality to drag and drop multiple operations

- New setting to allow alternate machine scheduling priority
- New ASAP scheduling setting to equally schedule jobs across available alternate machines
- New scheduling setting to take into account the current time when performing auto schedule

Enhanced shop floor execution and data collection

- New workforce management dashboard
- Extended workbench functions for employees and equipment
- Automated data collection by connecting machines and other devices
- Manual equipment control including clock in/out, start/stop jobs, status tracking and more
- New “stopwatch” style downtime tracking of availability loss
- Enhanced tracking of performance and quality loss
- Material issue validation of bin/serial/lot items
- Scrap/reject code entry validation & enforcement
- Job receipts posting including bin/serial/lot
- Extended management with posting of non-productive time
- Extended warning messages by job
- Extended transaction control & reporting

New factory performance tracking and analysis

- Loss management dashboard with powerful drilldown to drive continuous improvement
- Factory management dashboard including total effective equipment performance (TEEP)
- Extended employee analysis to drive world class overall labor effectiveness (OLE)
- Extended equipment analysis to drive world class overall equipment effectiveness (OEE)
- Product analysis showing performance and quality metrics by employee or equipment
- Loading charts and analysis for greater understanding of capacity utilization and availability
- Availability analysis for employee (direct/indirect) and equipment (uptime/downtime) reporting
- Performance analysis for actual vs planned run rate analysis
- Quality analysis for scrap/waste analysis

Server Configuration and Requirements

Overview

MOM can be installed in two server configurations:

- Two-tier server configuration where the MOM SQL databases and MOM website are installed/hosted on the same physical or virtual server. The Visual APS application server should be a separate server.
- Three-tier server configuration where the MOM SQL server and MOM website server are on separate servers. The Visual APS application server should be a separate server.

MOM has a number of requirements. Please review these requirements carefully and ensure you have satisfied them prior to the installation:

- Hardware requirements
- Software requirements and prerequisites

Two-Tier Server Configuration

The MOM Two-Tier server configuration is where the Web and SQL are installed on the same Server.

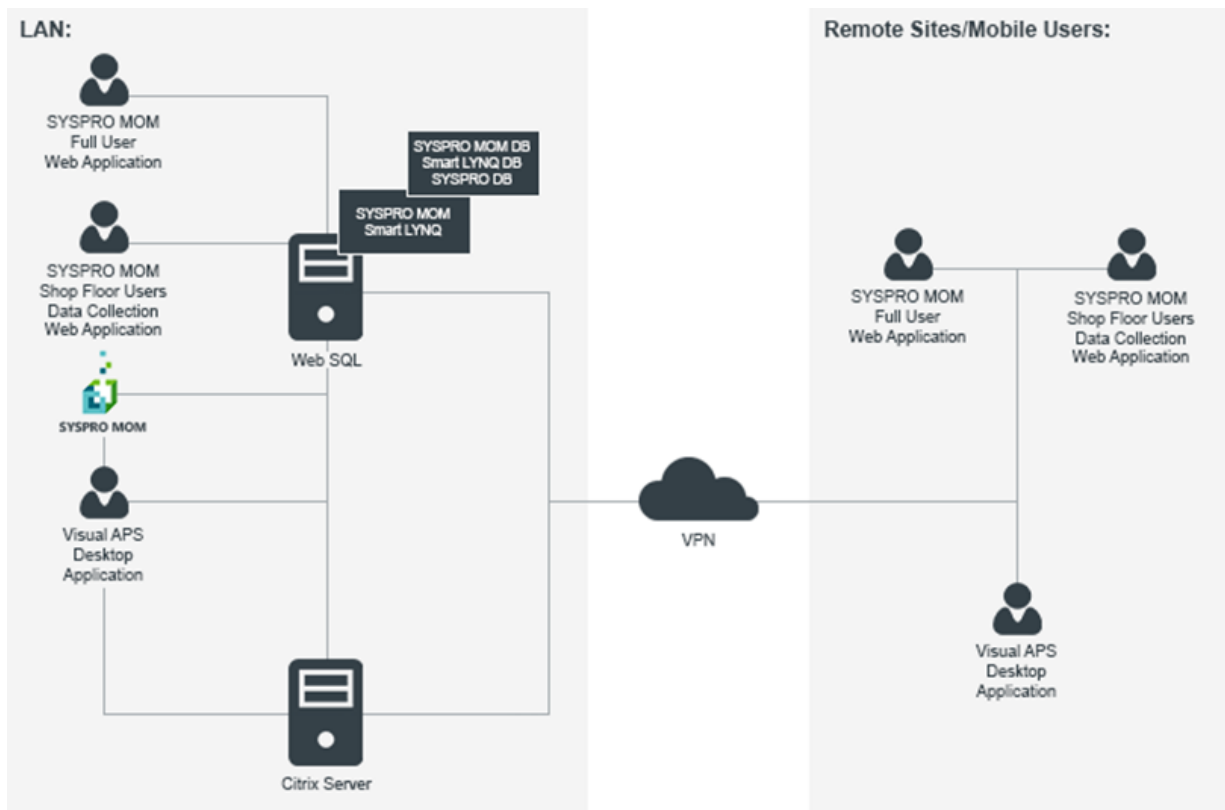
The **MOM Two-Tier** server configuration is where the **MOM Web Site** and the **MOM SQL** databases are installed/hosted on the same physical or virtual server. In the example of a two-tier setup, all components of **Manufacturing Operations Management** will be installed on the same server. **Manufacturing Operations Management**, **SmartLYNQ** and the databases required for each application will reside on the **SYSPRO** Server.


This type of setup is suitable for organizations with a small number of users and where performance and security of the application is less of a consideration. This type of setup is not recommended, especially where a customer wants to make the **MOM Web Site** publicly available. If a single server is compromised both web server and database server are vulnerable.

Normal recommendation is to split out the Web and SQL Servers (Three-Tier).

It is a requirement that **MOM** Databases are hosted within the same **SQL** instance as the **SYSPRO** databases. You do not need to consider a different **SQL Server** or **SQL instance** dedicated to MOM.

A Citrix Server or a RDS Server may be considered if sites have a high number of **Visual APS** users or when **Visual APS** users are connecting to the SQL Server via a WAN/VPN connection. In this scenario, **Visual APS** would be published as an application to the Citrix/RDS Server, providing ease of deployment, centralized management and better application performance over low bandwidth networks.



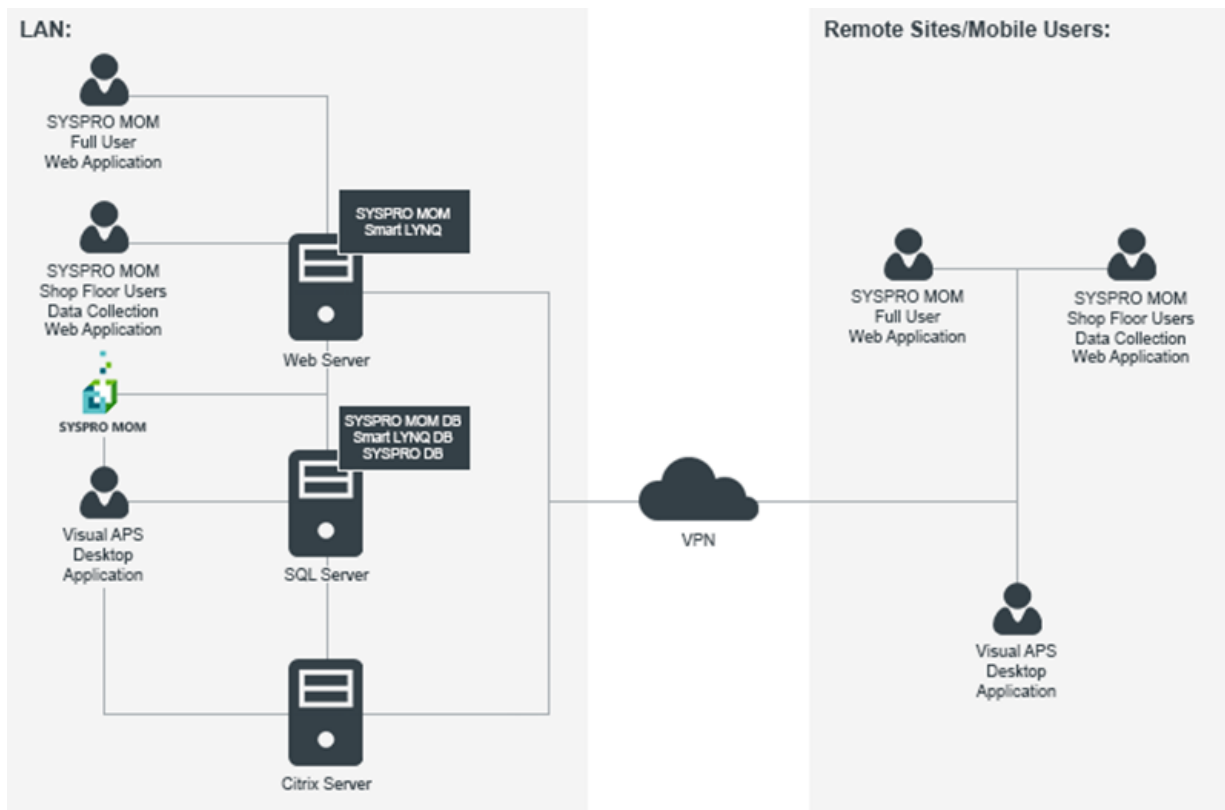
 **Note:** The **Manufacturing Operations Management Web Site** database(s) must reside on the same **SQL Server** or same **SQL Server** instance as the **SYSPRO** company databases. **SQL Server** must be configured in mixed mode authentication.

Three-Tier Server Configuration

The Three-Tier server configuration is where you have a dedicated Web Server and a separate SQL Server.

In the example of a three-tier setup, components of Manufacturing Operations Management will be installed on a dedicated Web and SQL Server. Manufacturing Operations Management and SmartLYNQ will be installed on the Web Server and the applications databases will reside on the dedicated SQL Server. Citrix will be on a separate server.

This type of setup is suitable for organizations where performance and security of the application is an important consideration.



Note: The **Manufacturing Operations Management Web Site** database(s) must reside on the same **SQL Server** or same **SQL Server instance** as **SYSPRO**. **SQL Server** must be configured in mixed mode authentication. **SYSPRO's** terminology around Two-Tier and Three-Tier has a different meaning. **SYSPRO's** terminology does not refer to the **Web Server** being split out but whether **SYSPRO** and the **SQL Server** are running on the same server or not.

Software Requirements and Prerequisites

The following tables detail the minimum software requirements for all components of Manufacturing Operations Management.

Minimum Software Requirements – Web Server

Operating System	<p>Manufacturing Operations Management is supported on the following operating systems:</p> <ul style="list-style-type: none"> Windows Server 2008 R2 Windows Server 2012 Windows Server 2012 R2 Windows Server 2016
Additional Software	<ul style="list-style-type: none"> IIS 7.0+, IIS 8.0+ and IIS 10 with .NET Extensibility Enabled <ul style="list-style-type: none"> ASP.NET Impersonation and Windows Authentication enabled Microsoft .NET Framework 4 or above SSL Certificate (Optional)

Supported Browsers	<ul style="list-style-type: none"> • Internet Explorer 11+ • Microsoft Edge • Google Chrome • Safari
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Minimum Software Requirements – Database Server

RAM	Cores (virtual)	Cores (physical)	Hard Disk	NIC	Screen Resolution
4GB/8GB	2 to 4	1 processor	1GB	100MB/1GB	21"-24" (1920 x 1080)

Minimum Software Requirements – Visual APS

Operating System	<p>Manufacturing Operations Management is supported on the following operating systems:</p> <ul style="list-style-type: none"> • Windows Server 2008 R2 • Windows Server 2012 • Windows Server 2012 R2 • Windows Server 2016
Additional Software	<ul style="list-style-type: none"> • Microsoft .NET Framework 3.5 or above • Citrix and Microsoft Terminal Services (optional)
Supported Browsers	<ul style="list-style-type: none"> • Internet Explorer 11+ • Microsoft Edge • Google Chrome • Safari

 **Note:** Firefox browser is not supported.

Minimum Software Requirements – SYSPRO

Manufacturing Operations Management reads data directly from a number of SYSPRO tables. The following tables must be populated with data in order to use Manufacturing Operations Management effectively.

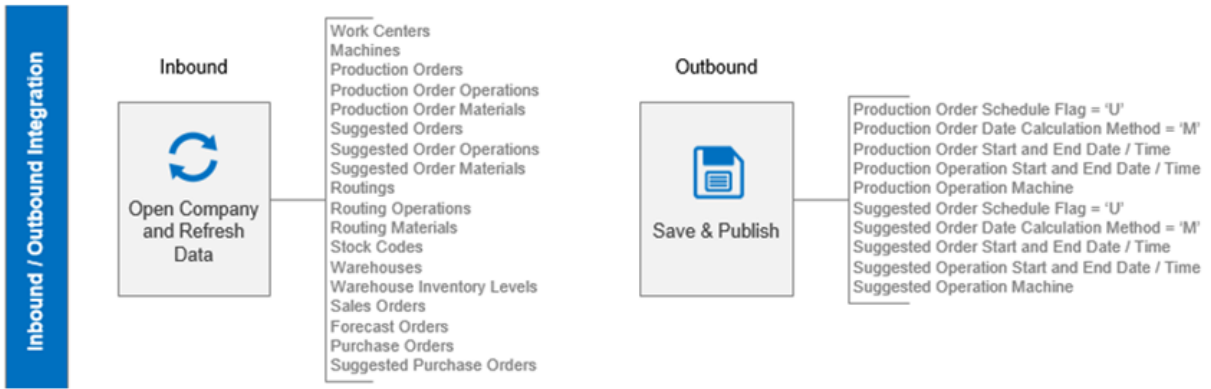


Figure 1: Visual APS Desktop Client

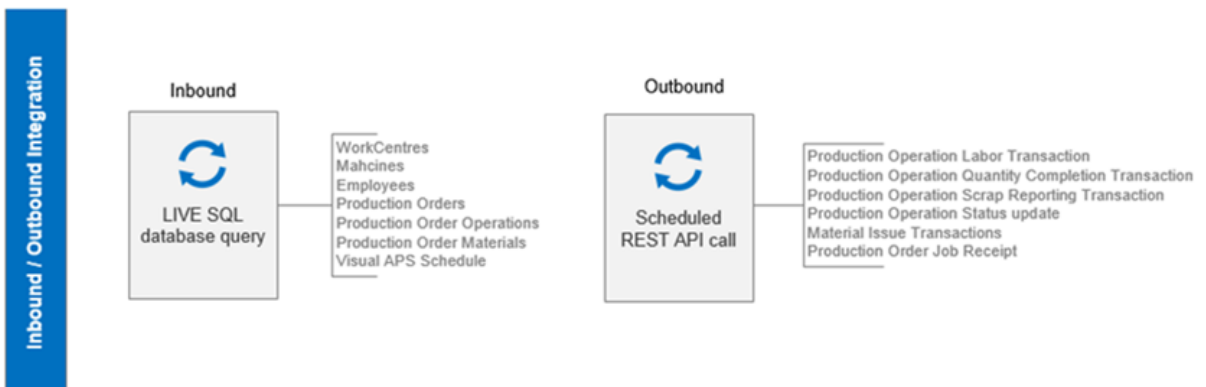


Figure 2: Manufacturing Operations Management

Minimum Hardware Requirements

The following hardware requirements should be considered for production environments.


Dedicated SQL Server

Company Size	Database Size	Users	RAM	Cores (Virtual)	C o r e s (Physical)
Small	<10GB	1 - 10	8GB	2-4	1 processor
Medium	10 - 50GB	11 - 100	16GB	4 - 6	2 processors
Large	50GB +	100+	24GB	6 - 8	2 processors

The disk capacity requirements for the **Microsoft SQL Server** may increase/decrease depending on the volume of jobs/operations generated within **SYSPRO** and the level of activity generated against these jobs/operations.

Dedicated Web Server

MOM Instances	RAM	Cores (Virtual)	Cores (Physical)	Hand Disk*
1- 2	4GB	2 - 4	1 processor	2GB
3 - 4	8GB	2 - 4	1 processor	4GB
5+	16GB	4 - 8	2 processors	5GB+

 **Note:** * (Hard Disk requirements) Allow 1GB of Disk Space per Manufacturing Operations Management (MOM) instance and add any additional space requirements for storing attachments in the document library.

Application Server (Citrix/Terminal Services) for Visual APS

The application server should not host the **Microsoft SQL Server** or Internet Information Services due to performance concerns. The application server will require a certain amount of RAM to be set aside for the operating system, leaving the rest for client sessions.

Visual APS is processor intensive. While processing the auto scheduling operation, we recommend that you dedicate a separate processor (core) for each **Visual APS** session. Supplying additional cores for the applications auto scheduling operation will provide faster performance almost proportionally to the number of cores you have used.

Visual APS uses Random Access Memory (RAM) to hold all data while it processes planning data. Each installation will vary on the amount of memory required based on the amount of process data. You should consider 4/8GB RAM per **Visual APS** session depending on the complexity of scheduling requirements and volume of data.

Manufacturing Operations Management Application and Shop Floor Users


Hardware	<ul style="list-style-type: none"> • PC, Laptop, Tablet PC, All-in-One Touch screen PC, iPad • USB Host port or Bluetooth for Data Input Devices (Barcode Scanners) • 1GHz Processor (Dual Core preferable) • 2GB RAM • 10" screen minimum for tablet devices • 1920 x 1080 minimum for screen resolution • Case protector (optional) • Wall mounting devices (optional) • Network Connectivity to Web Server
Software	<ul style="list-style-type: none"> • Android and iOS • Windows 7 • Windows 8 • Windows 10 • Internet Explorer 11 • Google Chrome • Safari • Microsoft Edge

Visual APS Desktop Client

RAM	Cores (Virtual)	C o r e s (Physical)	Hard Disk	NIC	S c r e e n Resolution
4GB/8GB	2 - 4	1 processor	1GB	100MB/1GB	21"-24" or 1920 x 1080


SQL Disk and Database Configurations

Manufacturing Operations Management maintains separate databases for the application logic, application data and the application configuration. It is recommended that the recovery model in Microsoft SQL Server set against the application database is set to full recovery for disaster recovery purposes.

 **Note:** Remember to include in any disk capacity calculations adequate space for storing transaction logs, incremental and full SQL backups as required.

Unless you can tolerate any downtime, you should add protection to your servers against unexpected drive failures by using RAID. Hardware RAID implementations are always preferred over software RAID implementations. RAID 0 (disk striping without parity) offers optimal read/write performance, but if a drive fails, IIS/SQL won't be able to continue operation until the drive is replaced and its contents are restored from backup. Because of this, RAID 0 isn't the recommended choice. RAID 1 (disk mirroring) creates duplicate copies of data on separate physical drives, allowing the server to remain operational when a drive fails, and even while the RAID controller rebuilds a replacement drive in a failed mirror. RAID 5 (disk striping with parity) offers good protection against single-drive failure but has poor write performance. RAID 1+0 (disk striping and mirroring with parity) offers the best level of performance and protection.

For the best network throughput, all servers should be configured with a 1GB Network Interface.

 **Note:** Hardware requirements for both the Database and Web Server should be periodically reviewed to ensure Manufacturing Operations Management's response times are within acceptable levels for your organization. To maintain read/write times it is recommended that Microsoft SQL Server Database Maintenance plans are configured to rebuild and reorganize data on a regular basis.



Installation

Overview

The software requirements need to be checked before you start the installation. A list of software requirements are shown below and the recommended installation process follows this sequence.

1. Install Visual APS.
2. Configure Visual APS.
3. Install Manufacturing Operations Management.
4. Configure Manufacturing Operations Management.
5. Install SmartLYNQ.
6. Configure an instance of SmartLYNQ to connect to SYSPRO via the SYSPRO WCF Services.

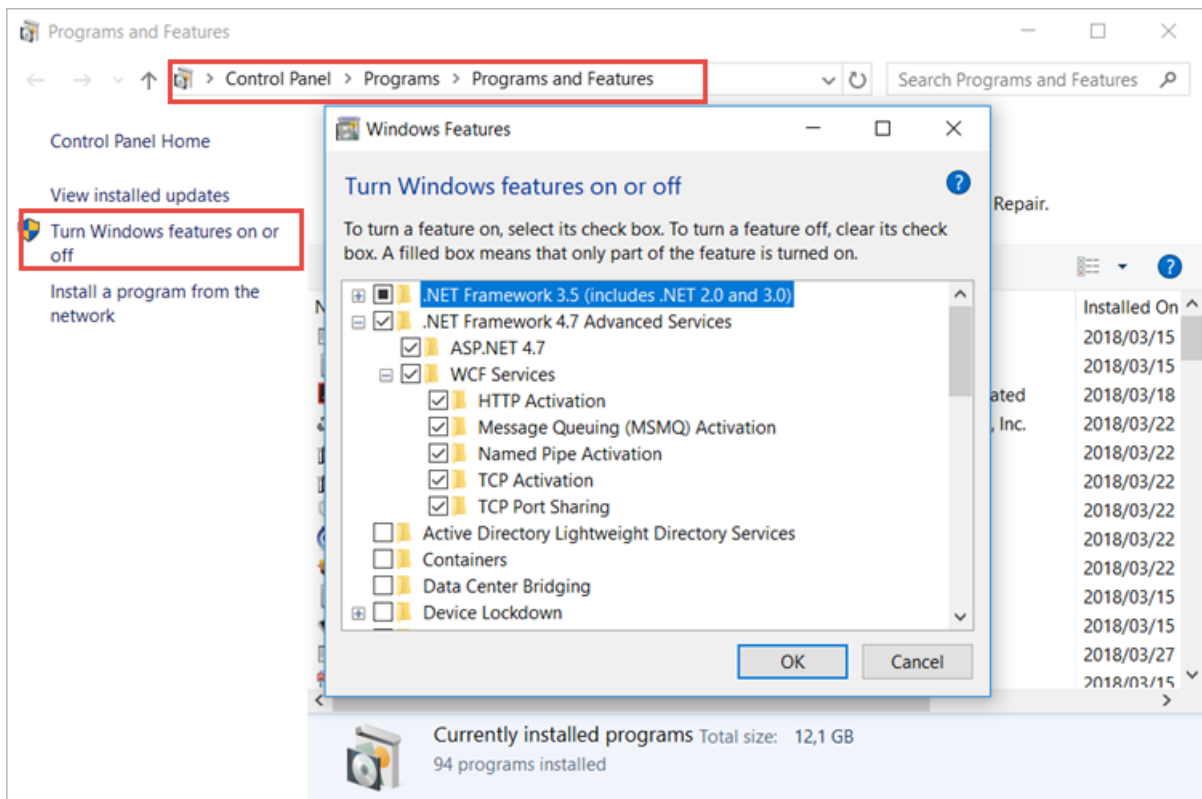
Requirements and Prerequisites

Ensure that you have verified the hardware, system and software requirements.

Software Requirements :

- IIS 7.0+ with .NET Extensibility enabled
- ASP.NET Impersonation and Windows Authentication enabled
- Microsoft .NET Framework 4 and above
- SSL Certificate (Optional)
- Microsoft SQL Server
- SYSPRO e.net communications

Under features of the server, **.NET Framework 4.5 Features (installed)**, there is a **WCF Services (Installed)**. Make sure that the option **HTTP Activation (Installed)** is selected.




Installing MOM

The start of the installation is with a manual download of the Manufacturing Operations Management zip file to a folder of your choice.

There are three features that need to be installed and they are **Visual APS Server**, **Management Operations Management** and **SmartLYNQ**.

The installation wizard allows you to install all three features one after the other.

 **Note:** Between each install there are configurations that need to be completed before the start of the next feature being installed.

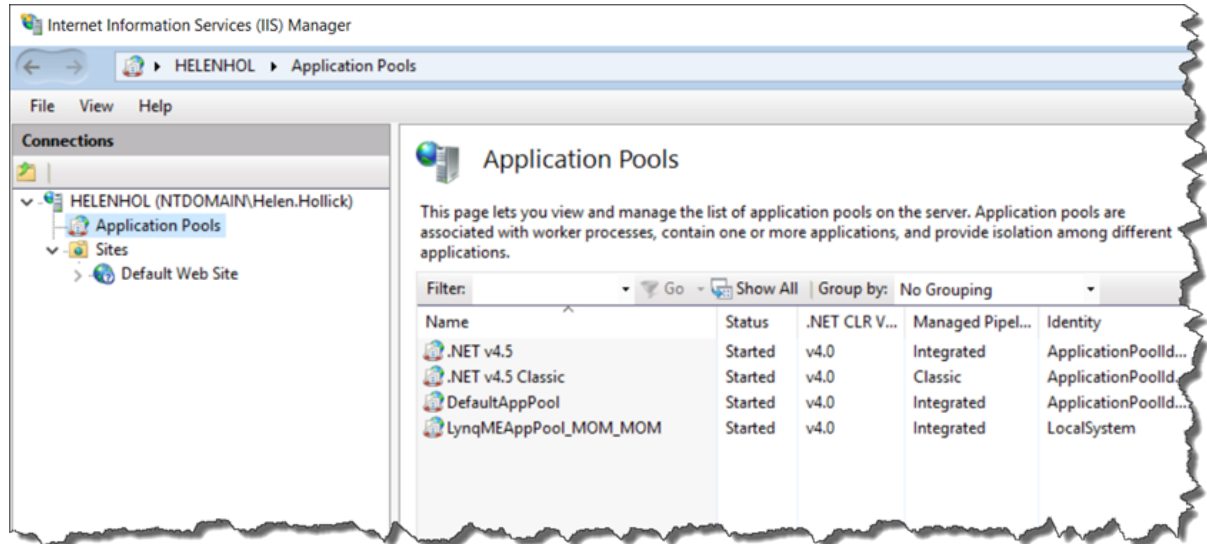
Visual APS

- The **Visual APS Client** should be installed by **Visual APS** user's only after the **Visual APS Server** feature has been installed and users have been setup in the application.
- The **Visual APS** client cannot be used to install the pre-requisites for **Visual APS**.
- Pre-requisites for **Visual APS** are installed as part of the **Visual APS Server** feature. The user installing the **Visual APS Server** feature must have SQL administrator rights as the installation wizard will execute SQL statements that require this level of security.
- The **Visual APS Server** and **Visual APS Client** feature will install the same **Visual APS** application. The **Visual APS Server** feature should be installed on the **Web Server** during the installation of the **Web Sites**.
- When the Visual APS Server install is completed and before you start the Manufacturing Operations Management install, you need to add a Company Database Connection and import at least one resource (machine).

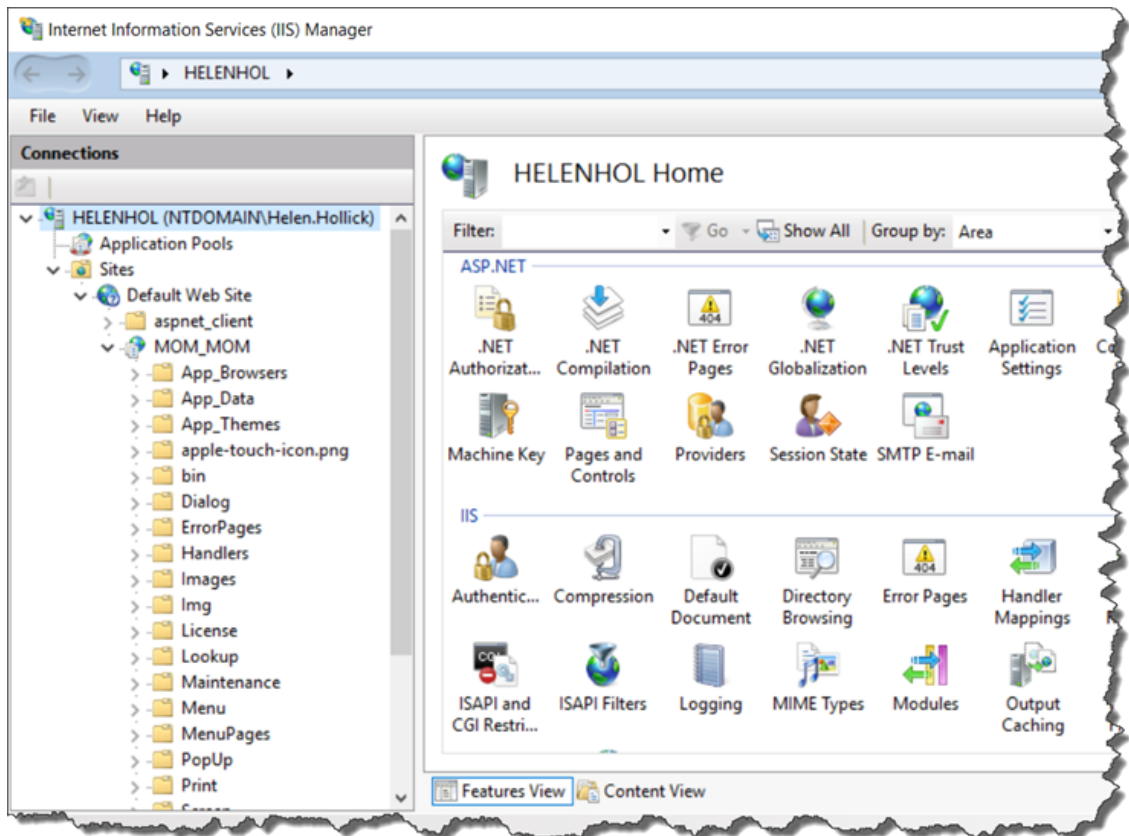
Manufacturing Operations Management (MOM)

- **Visual APS Server** needs to be installed and configured before you start with the MOM install.
- After the MOM install you need to perform a few tasks to configure the feature before installing SmartLYNQ.
- You need to **Configure a Profile** in MOM, Import and activate seats. Each Employee and Machine that are activated consume a seat.

During the Manufacturing Operations Management Install:



- The MOM install creates its own application pool (LynqMEAppPool_MOM_MOM). This is found under **Application Pools**.
- It will also create a Web Site under the **Default Web Site**. The Web Site is pre-configured.



- If the IIS role has not been enabled on the Server, the install will enable it automatically, it will select the required options of the role.

SmartLYNQ

- The install of **Visual APS** has created a **SQL account** called **thinklynqservice**. This account is key to operation of SmartLYNQ and MOM.
- Once **SmartLYNQ** is installed you need to **Configure SmartLYNQ** and then **Map MOM to SmartLYNQ**.

Product Updater

The installation wizard installs the base versions, currently they are:

- Visual APS Build 9.7
- MOM Build 3.8
- SmartLYNQ Build 5.4

It is important to note that if you are using your installed version of MOM in combination with the Training Guide, you must update all features of your MOM installation to versions listed below:


- Visual APS Build 9.16
- BOM Build 3.17
- SmartLYNQ Build 5.7

You need to run the **ProductUpdater** with **Administrator** rights to update all versions to the latest build.

Installation Checklist

During the installation of Manufacturing Operations Management, you will be requested for the following information.

To prepare for the install it is recommended that you have the following information to hand.

 **Note:** You must be logged on as a windows administrator to perform the install and **User Account Control** must be disabled on each server or client computer. The user that is completing the installation of Manufacturing Operations Management must be a member of the SQL sysadmin fixed server role. You will be issued with a license file and a Manufacturing Operations Management license name. You must have the license file and license name available before starting the installation.

Requested Information	
Manufacturing Operations Management License Name (Provided by SYSPRO)	
Manufacturing Operations Management License File (Provided by SYSPRO)	
Web Server Name	
Database Server Name	
SYSPRO Database Name	
Manufacturing Operations Management Database Names (created during installation)	
SmartLYNQ Database Name (created during installation)	
Web Site User Name & Password (supplied during installation)	
Network User Names for configuring application security	
SMTP Mail Configuration Settings (optional)	

Manufacturing Operations Management and SmartLYNQ databases are created automatically by the installation wizard. Manufacturing Operations Management Database names are unique to the SYSPRO Company Code that you are installing.

The installation wizard will create databases based on the type of installation selected.

Manufacturing Operations Management Data is stored directly in the SYSPRO database when the option to install a demonstration instance of Manufacturing Operations Management is selected. This is not recommended for Production or Test environments.

The [CompanyCode] is specified during the installation wizard and represents the SYSPRO company code.

Manufacturing Operations Management Databases


Environment	Content Type	Database Name
Production	Data	MOM_[CompanyCode]_Data
	Configuration	MOM_[CompanyCode]_Config
	Logic	MOM_[CompanyCode]_Logic
Test	Data	MOM_[CompanyCode]_Data
	Configuration	MOM_[CompanyCode]_Config
	Logic	MOM_[CompanyCode]_Logic
Demonstration	Data	SYSPRO Database
	Configuration	SYSPRO Database
	Logic	SYSPRO Database

SmartLYNQ Databases

Environment	Content Type	Database Name
Production	Data	Default is SmartLYNQ (Can be overwritten)
Test/Demonstration	Configuration	Default is SmartLYNQ (can be overwritten)
	Logic	Default is SmartLYNQ (can be overwritten)

SQL Server Connection Strings

The Manufacturing Operations Management and Smart LYNQ Web Sites connect to the databases (both Manufacturing Operations Management and SYSPRO) using the account specified in each of the applications web.config file. The SQL account “thinklynqservice” is automatically created during the installation process specifically for this purpose.

 **Note:** Ensure that you have enabled mixed mode authentication in SQL before proceeding. It is important that this account is not deleted and/or the password changed. Changing any of the account settings will prevent the web site applications from working.

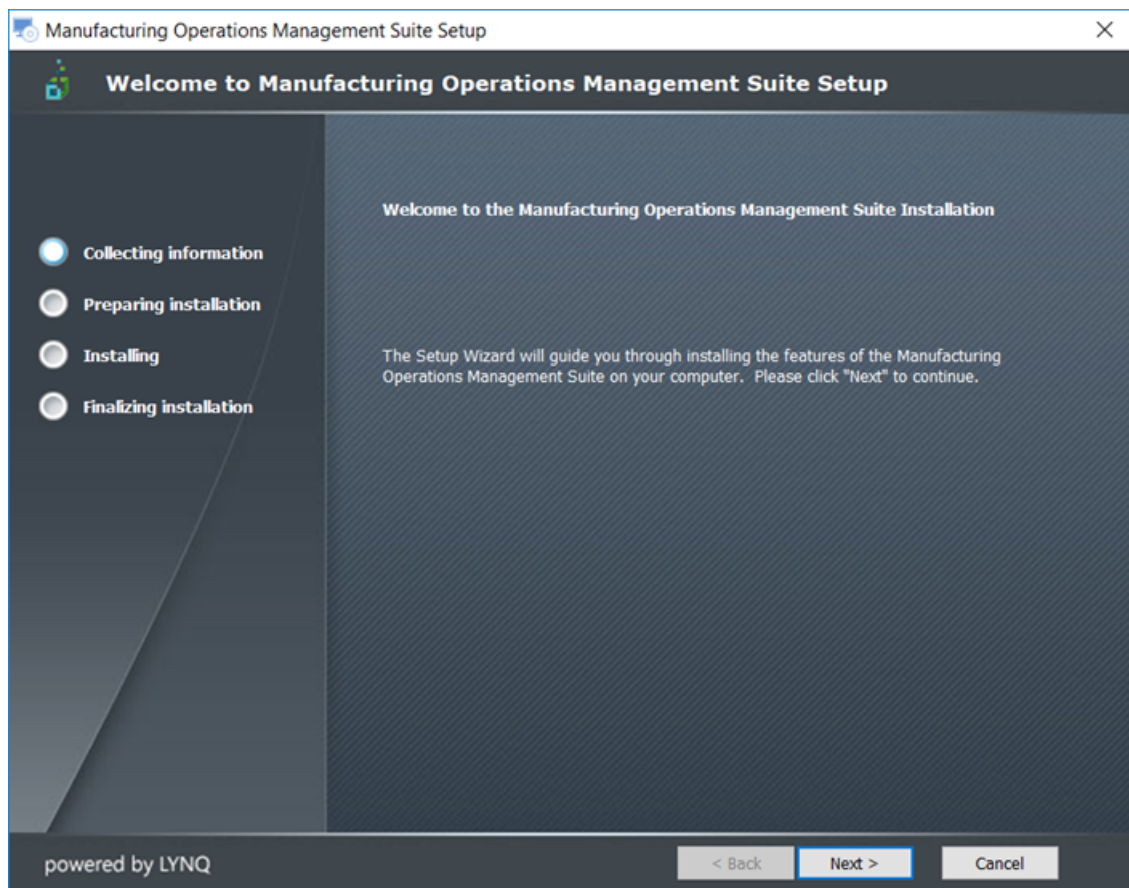
The installation wizard will install the necessary pre-requisites for internet information services. You must however ensure that Microsoft SQL Server, SYSPRO WCF services and any required licencing has been installed prior to installing Manufacturing Operations Management.

Installing Visual APS Server

The following steps describe how to install Visual APS Server

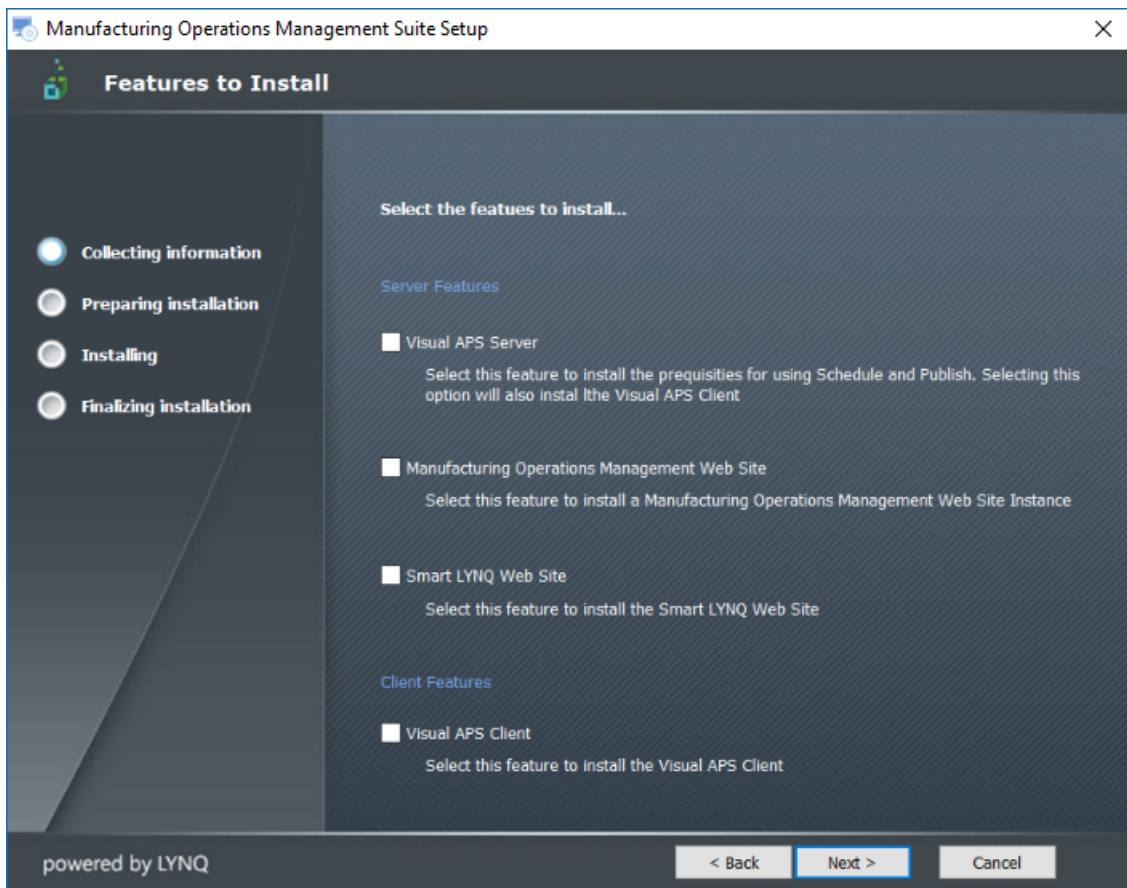
- i** These installation steps will reference the SysproCompanyMOM database. You will reference your company's database(s) instead. However, if you are installing this for a demo environment, please ensure that you have loaded the SYSPRO MOM demonstration company with the SysproCompanyMOM database and are able to log in to SYSPRO.
1. Logon as the administrator to the server where you have chosen to install the web site features of **Manufacturing Operations Management**.
 2. Run the file name **Manufacturing Operations Management Suite.exe** to start the installation wizard.

The **Welcome to Manufacturing Operations Management Suite Setup** window is displayed.



3. Select **Next >**.

The **Features to Install** window is displayed.



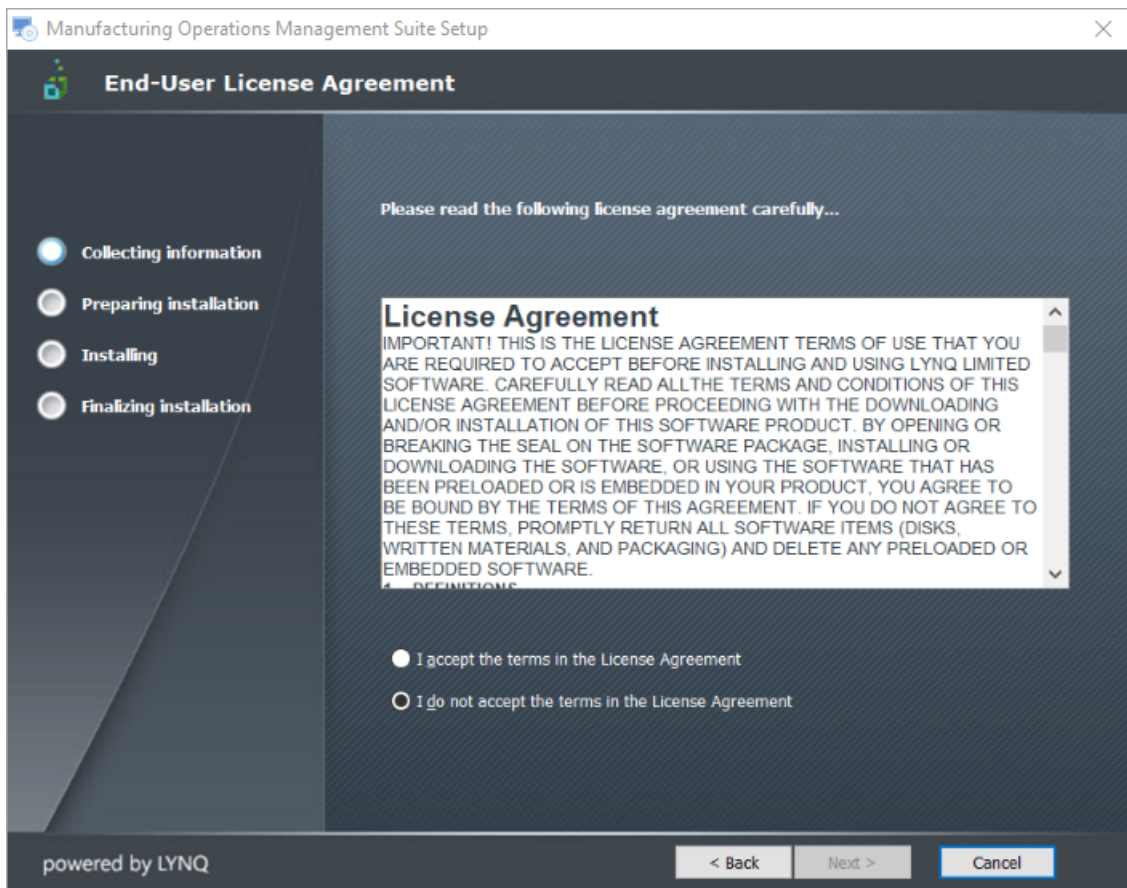
4. Select the feature(s) to be install and select **Next >**.

For our purposes, select **Server Features: Visual APS Server**. You will be installing each feature separately.

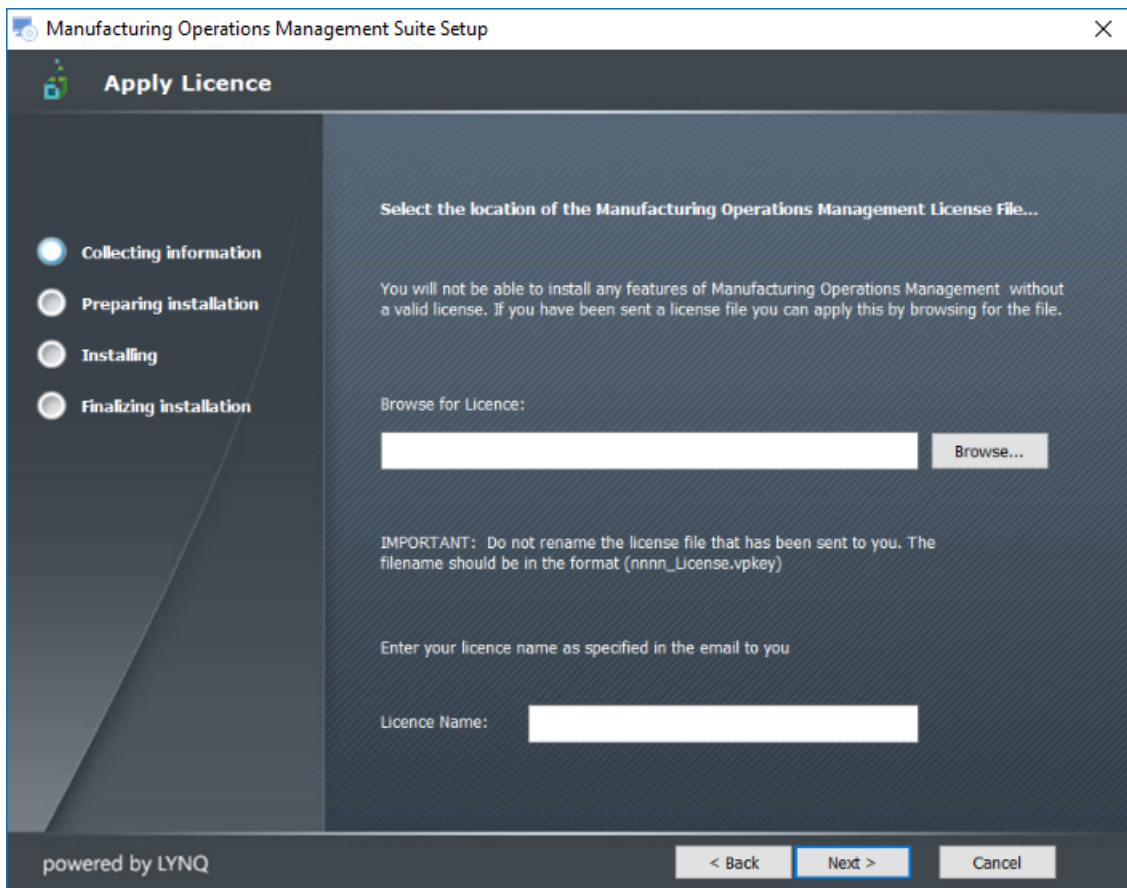
Select **Next >** to continue.

Note: The **Visual APS Client** should be installed by **Visual APS** user's only after the **Visual APS Server** feature has been installed and users have been setup in the application. The **Visual APS** client cannot be used to install the pre-requisites for **Visual APS**. Pre-requisites for **Visual APS** are installed as part of the **Visual APS Server** feature. The user installing the Visual APS Server feature must have SQL administrator rights as the installation wizard will execute SQL statements that require this level of security. The **Visual APS Server** and **Visual APS Client** feature will install the same **Visual APS** application. The **Visual APS Server** feature should be installed on the **Web Server** during the installation of the **Web Sites**

The **End-User License Agreement** window is displayed.



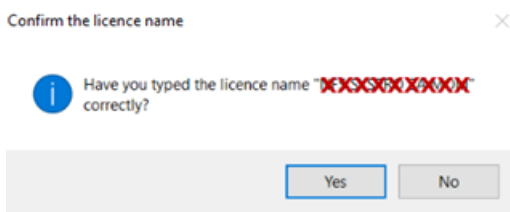
5. Select **I accept the terms in the License Agreement** and then **Next >**. The **Apply License** window is displayed.



6. Browse and select the license file sent to you by SYSPRO. Do **NOT** rename the license file. Enter your license name as sent to you by SYSPRO and select **Next >** to continue.

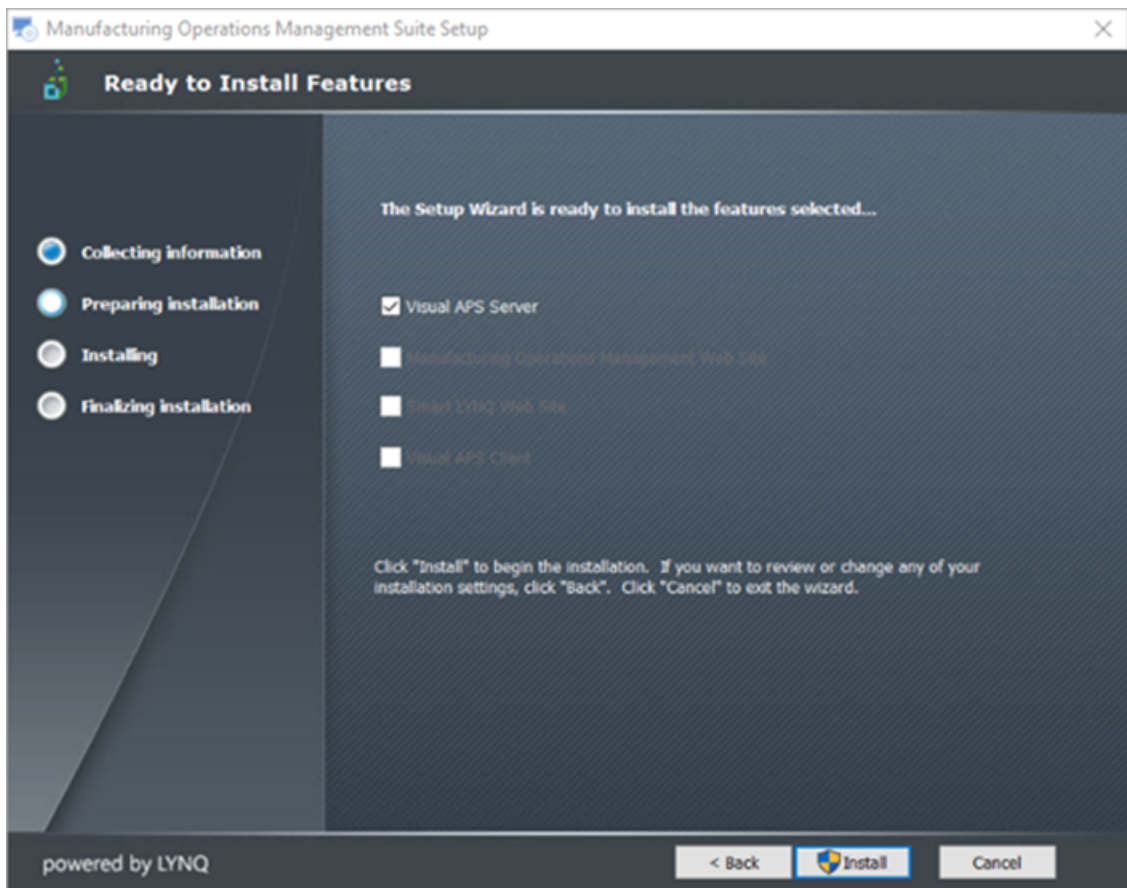
The License Name is not case sensitive.

The ***Confirm the License name*** Window is displayed.



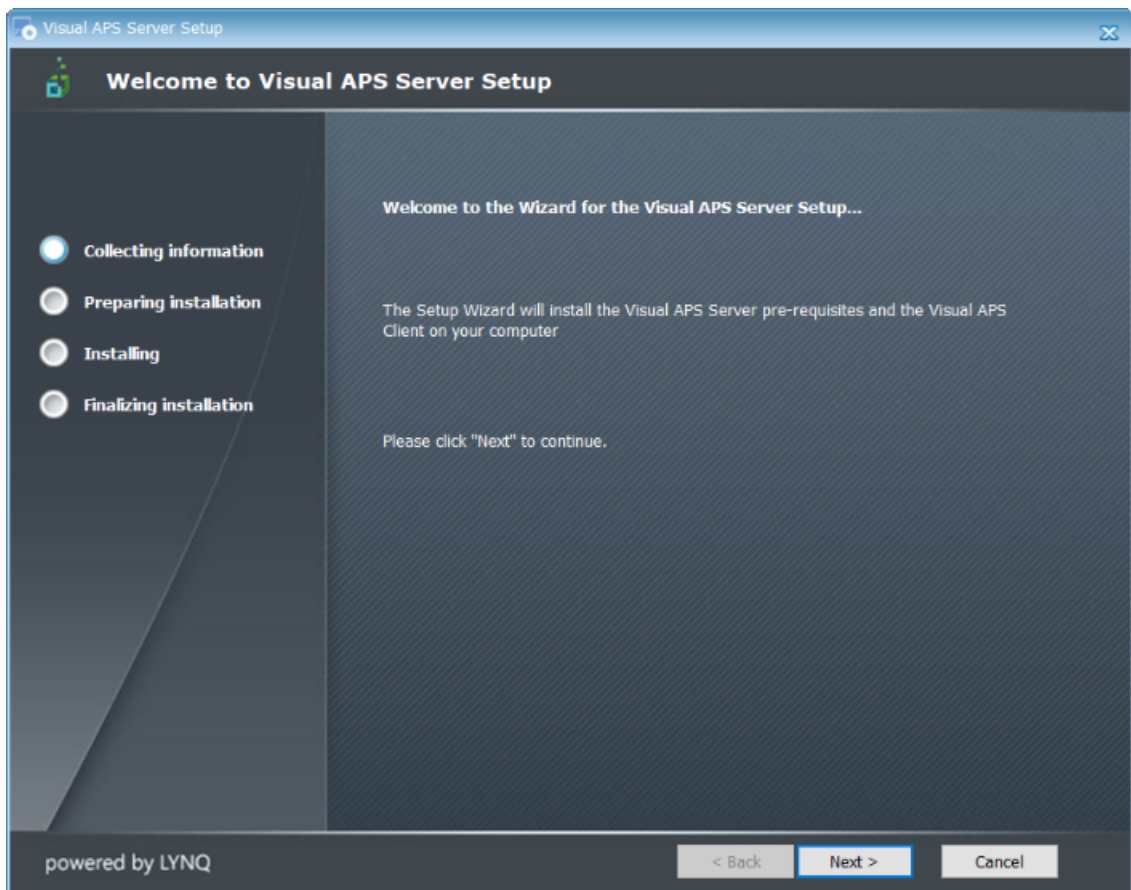
7. Confirm the license name entered and select **Yes**.

The ***Ready to Install Features*** window is displayed.



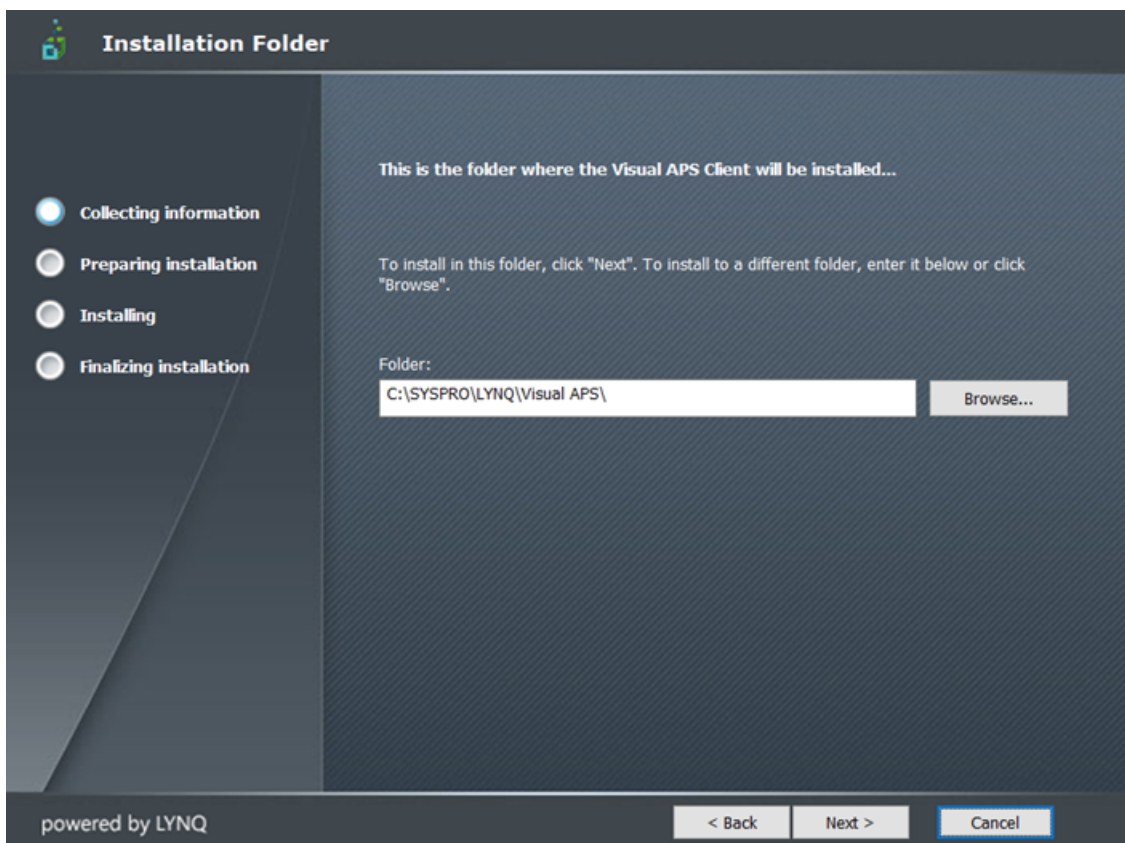
8. Select **Install** from the *Ready to Install Features* window to start the installation of the **Visual APS Server**.

The *Welcome to Visual APS Server Setup* window is displayed.




9. Select **Next >**.

The *Installation Folder* window is displayed.

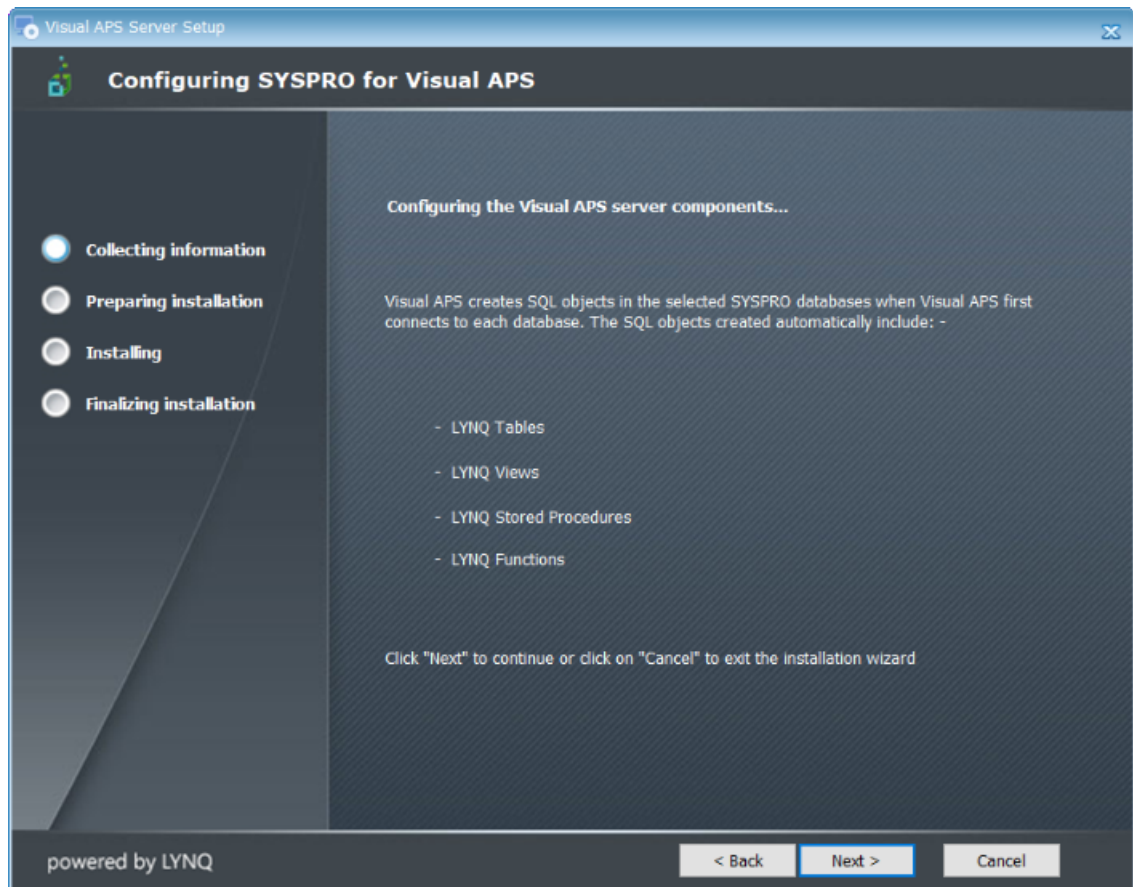


10. Browse for the folder where you want to install **Visual APS Client** and select **Next >** to continue.

It is recommended to use the default folder.

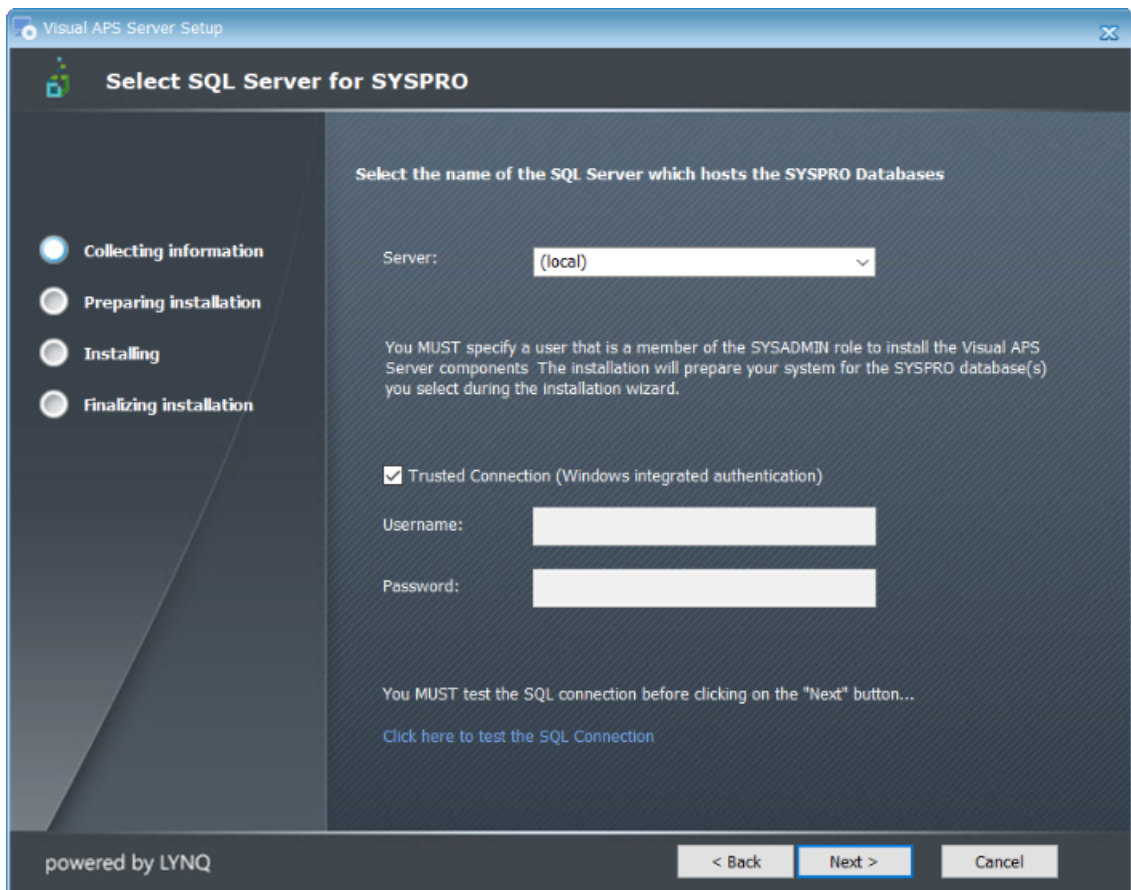
 **Note:** **Visual APS** creates SQL objects in the selected SYSPRO databases when **Visual APS** first connects to each SYSPRO database.

The **Configuring SYSPRO for Visual APS** window is displayed.



11. Select **Next >** to continue.

The **Select SQL Server for SYSPRO** window is displayed.



12. Enter the required **Server** information, test the **SQL Connection** and **Next >** to continue.

Select **(local)** if the **SYSPRO** database resides on the local computer or select the **server** where the **SYSPRO** databases reside.

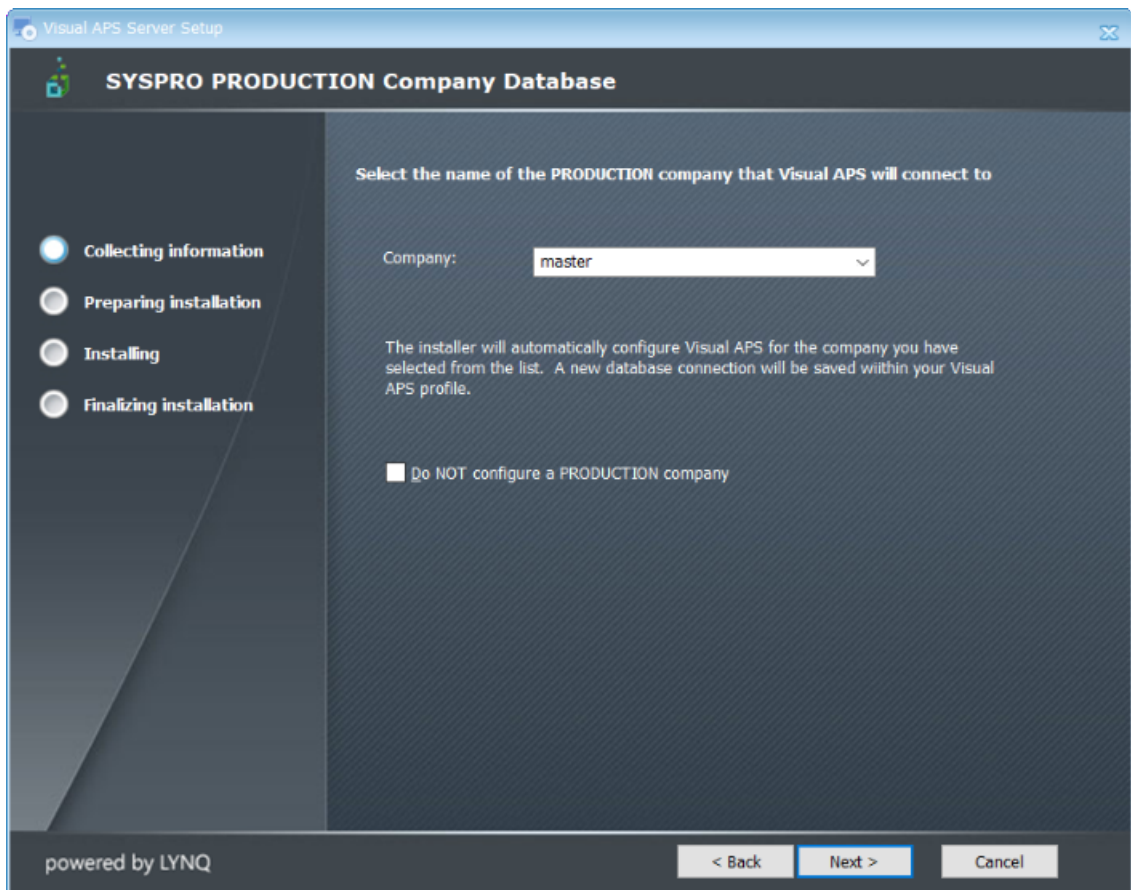
Select how you wish to connect to the **SQL Server** (Windows or SQL Authentication).

Test the SQL connection by clicking on the '**Click here to test the SQL Connection**'.

If the **SQL Connection is successful** you can select **Next >** to continue.

Note: If the **SQL Server Browser Service** is not running on your network, type in the server name. Visual APS does not use any ODBC calls.

The **SYSPRO PRODUCTION Company Database** window is displayed.



13. Select a **PRODUCTION (Live) company** that **Visual APS** will connect to or add the company later.

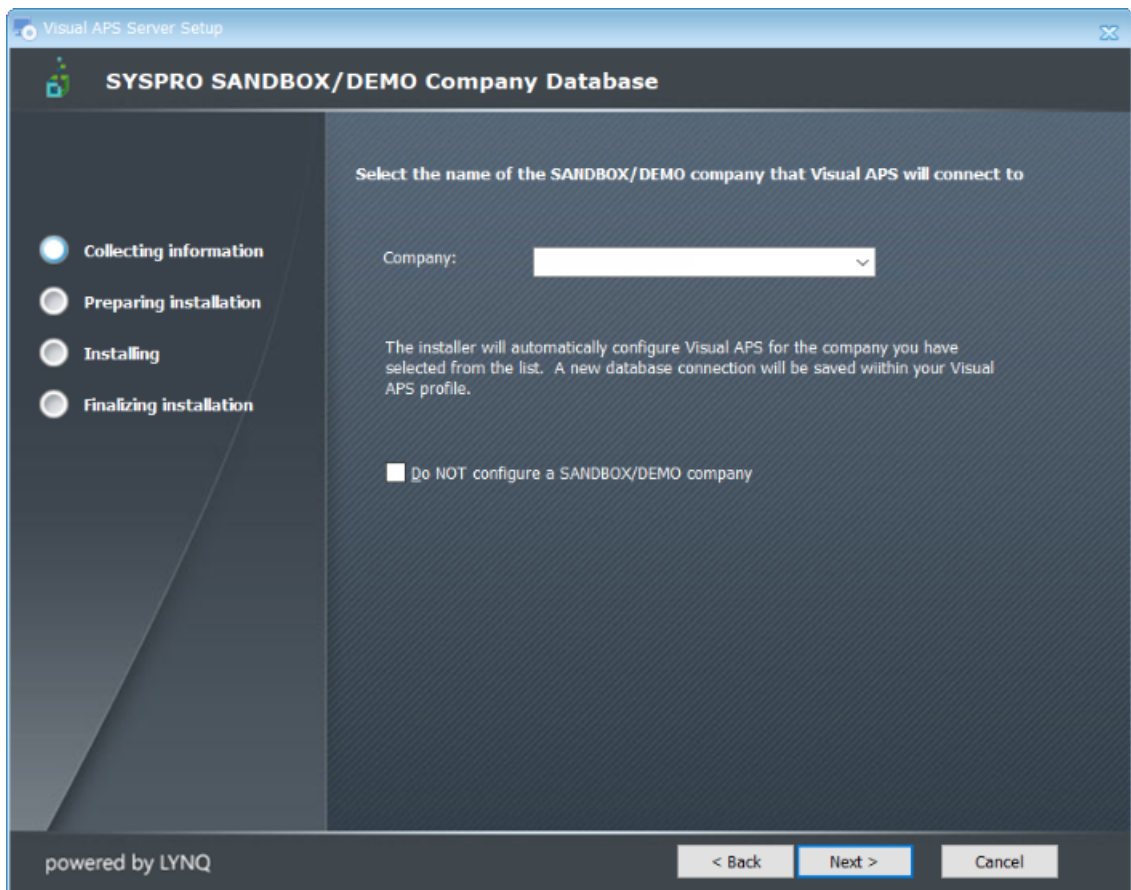
Select **SysproCompanyMom** and click **Next >** to continue.

 **Note:**

At this point you are given an option to automatically setup a database connection between **Visual APS** and the **SYSPRO Company**. You can ignore this and setup the company when you launch **Visual APS**. This **SYSPRO Company database name** will be validated by the system. It will also validate if there is any data that **Visual APS** will not be able to handle.

SYSPRO Databases are case sensitive whereas MOM is case insensitive.

The **SYSPRO SANDBOX/DEMO Company Database** window is displayed.

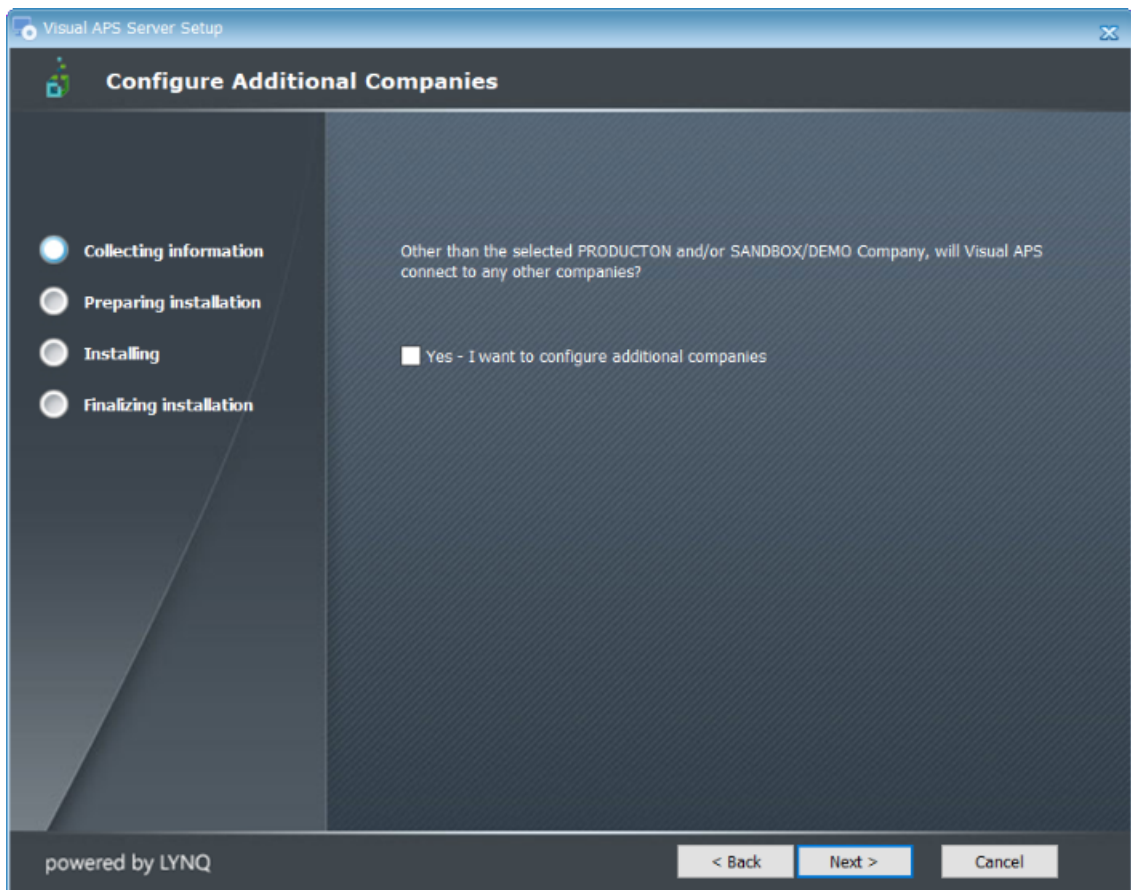


14. Select whether or not you will create a the **SYSPRO SANDBOX Company**. Select **Next >** to continue.

For our purposes, you will not be configuring a **SYSPRO SANDBOX/DEMO Company**.

Select **Do NOT configure a SANDBOX/DEMO company**. Select **Next >** to continue.

The **Configure Additional Companies** window is displayed.



15. You can configure additional companies by selecting **Yes - I want to configure additional companies**, else select **Next >**.

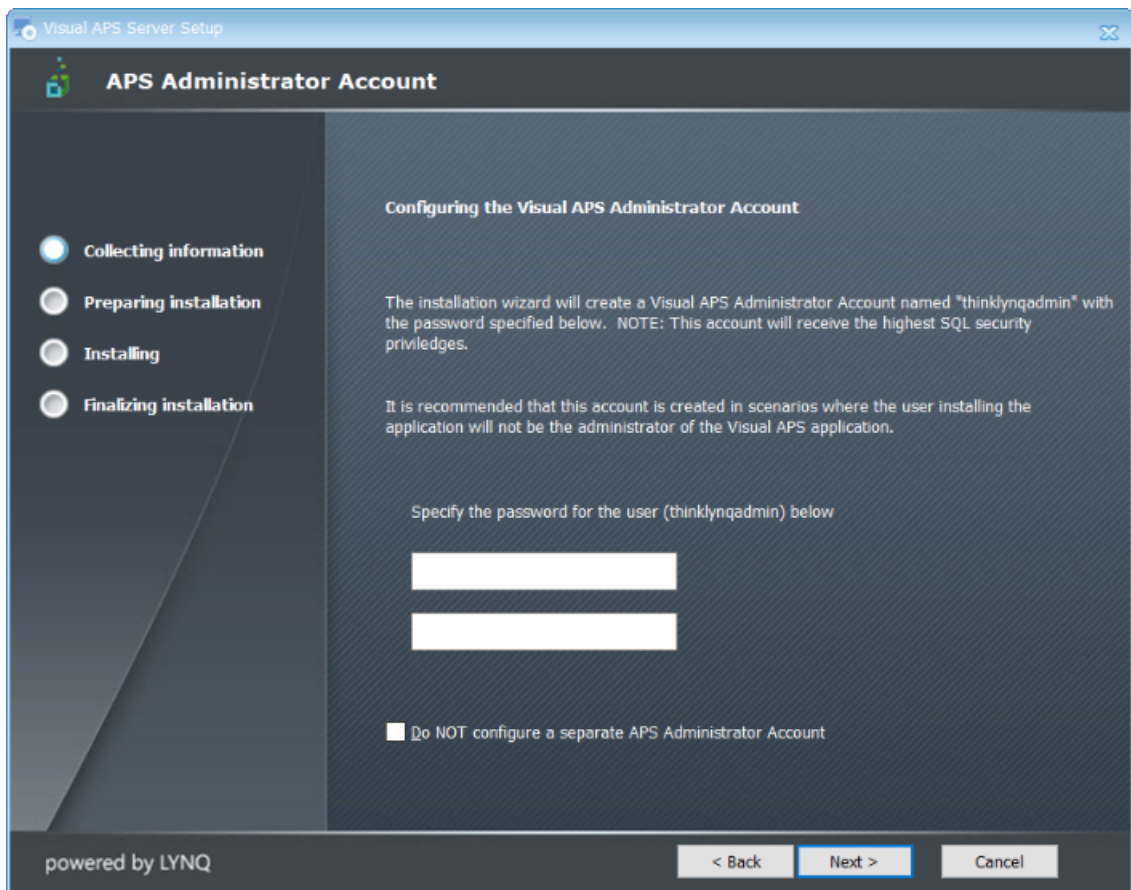
For our purposes, DO NOT select the option. Select **Next >** to continue.

 **Note:**

The **Visual APS Server** installation can only support the configuration of **two** companies.


To add additional companies, click **Yes – I want to configure additional companies** for further instructions.

The **APS Administration Account** window is displayed.

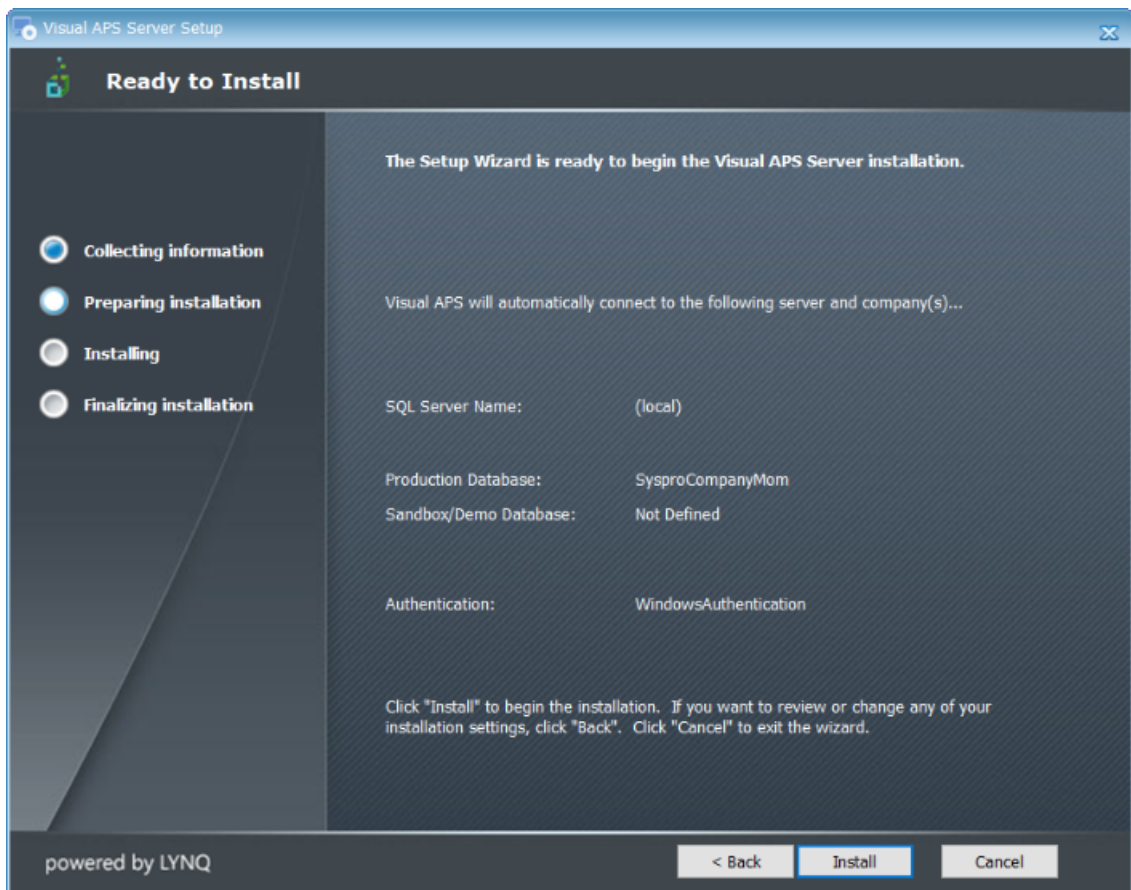


16. You have the option of creating a **Visual APS (SQL) Administrator** account by entering a password or assume that the windows login that is running the install will be administrator by selecting **Do NOT configure a separate APS Administrator account**.

For our purposes select **Do NOT configure a separate APS Administration Account** and then **Next >** to continue.

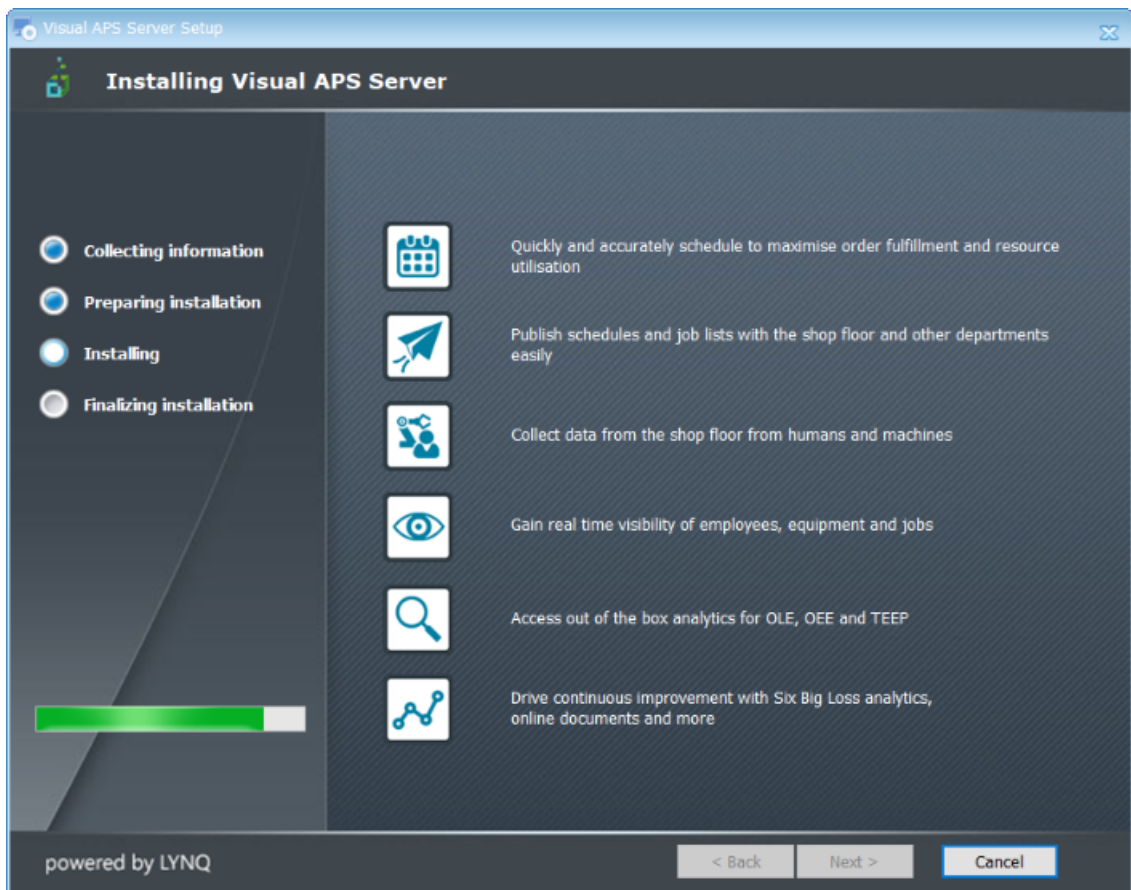
-  **Note:** The install allows you to create a separate admin user for Visual APS. There are times when the person installing the software is not the normal IT administrator of the system. They could be a contractor or someone that is not normally around all the time.

The **Ready to Install** window is displayed.

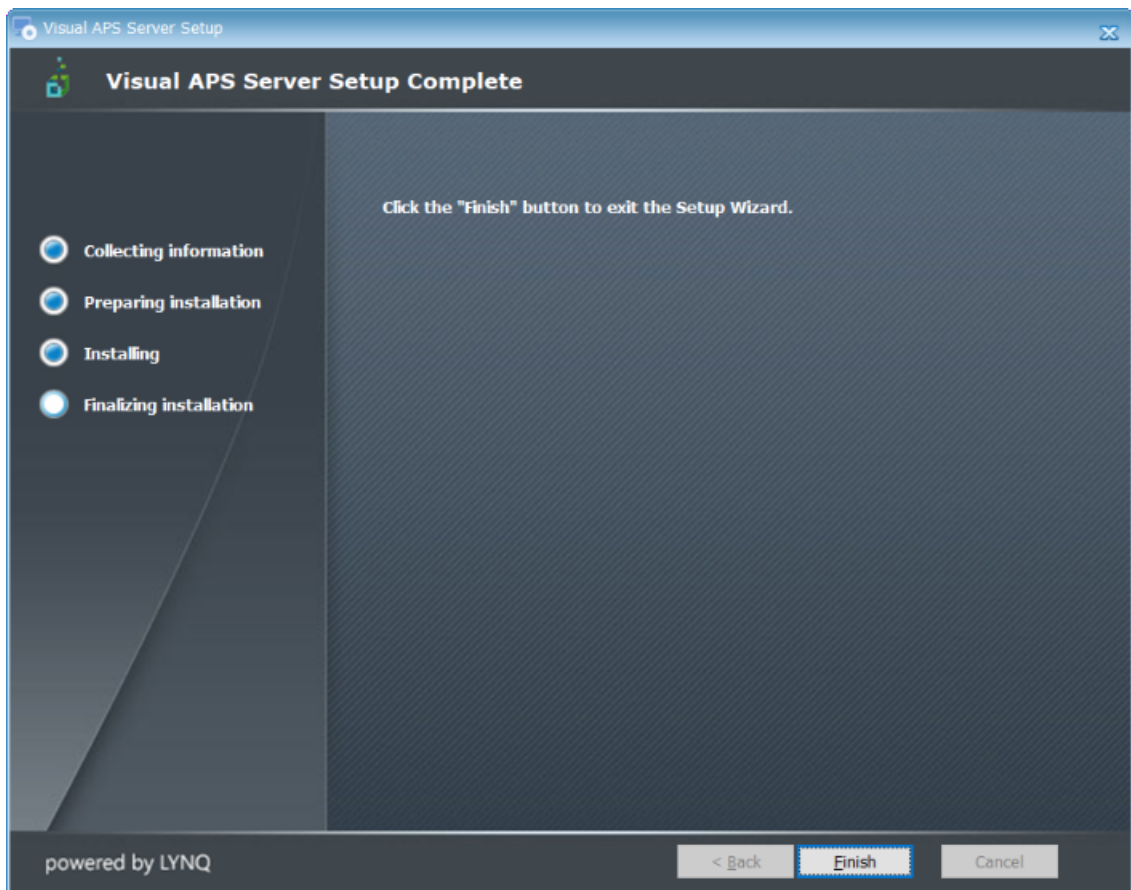


17. Confirm that you have selected the correct options from the previous dialog windows and click **Install**.

The *Installing Visual APS Server* window is displayed during the installation.

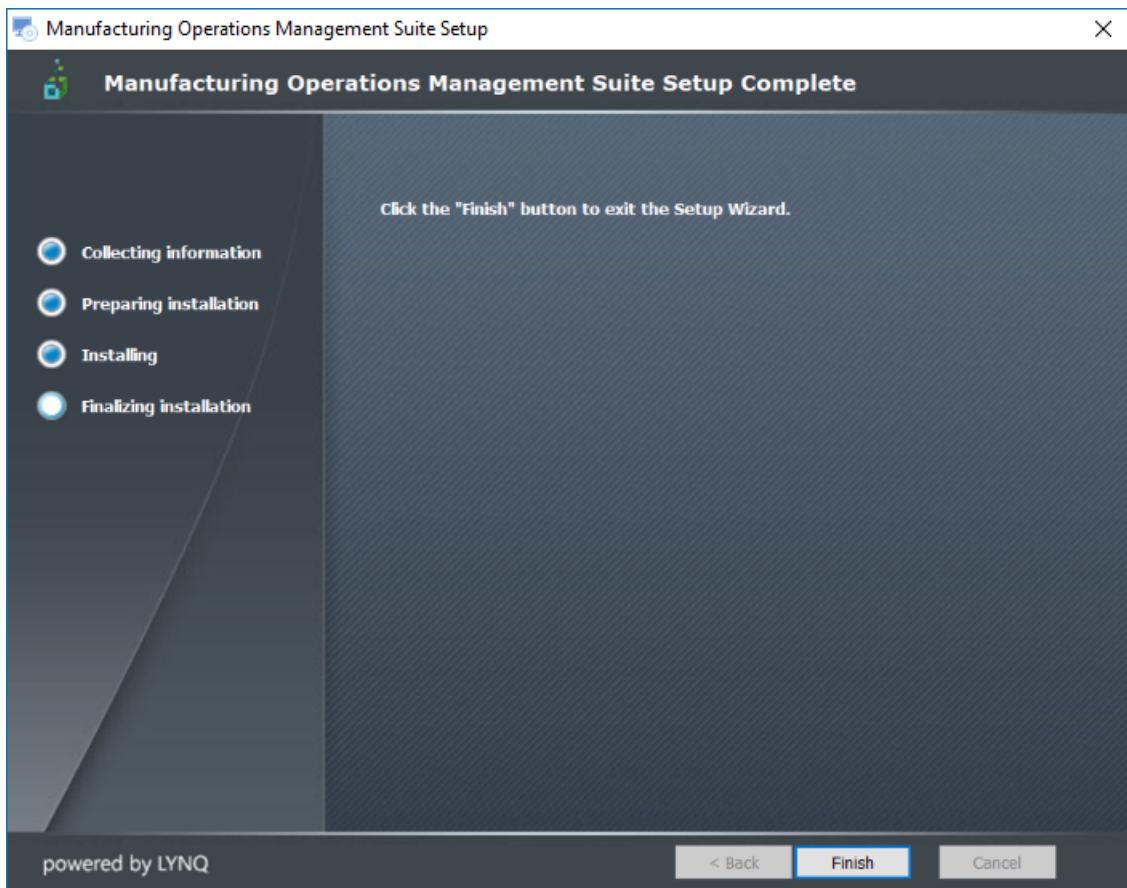


Once the install is complete the *Visual APS Server Setup Complete* window is displayed.



18. Select **Finish**.

The *Manufacturing Operations Management Suite Setup Complete* window is displayed.



19. Select **Finish** to exit.
20. The **Visual APS Client** will be loaded.

 **Note:**

You will need to complete the following configuration tasks before continuing with the installation. They are:

- Adding a new database connection
- Importing a machine.

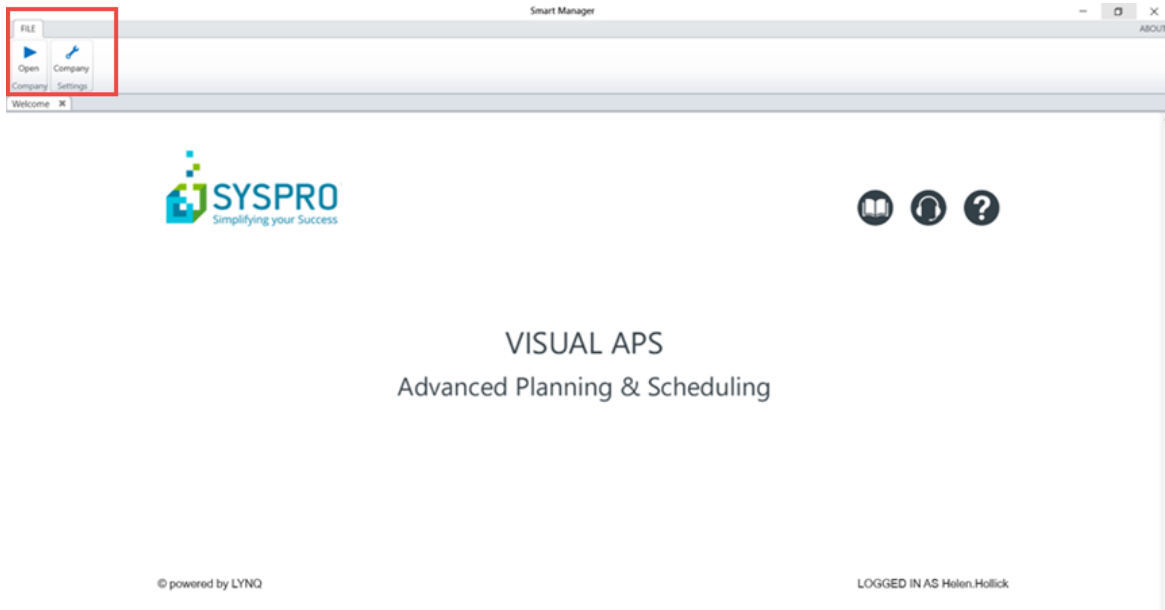
DO NOT move onto the MOM install before completing the tasks mentioned above.

Adding a company database connection

The following steps describe how to add a new company database connection in the Visual APS Client.

1. When the first install of **Visual APS** is complete the **Visual APS Client** will be opened.

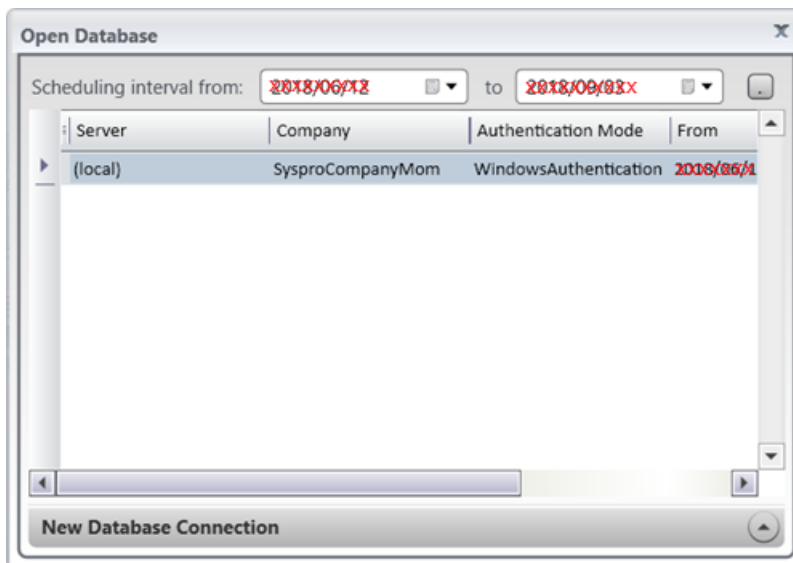
The **Visual APS** home page is launched,



2. View or add a new Company Database Connection.

Select **File>Open>Company** from the top left hand corner of the window.

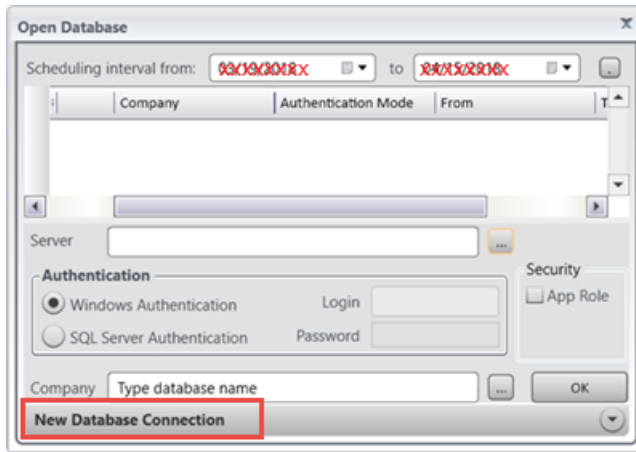
The **Open Database** window is displayed and shows the connection to the database you have selected during the install.



3. You can add additional Company Database connections by clicking on **New Database Connection** if you need to add more **Company Database Connections**.

You have already added the connection to the SYSPRO MOM database and therefore do not need to add another.

The **Edit Settings** window is displayed.



4. Enter the information required for the **New Database Connection**.

Browse and select the **Server Name**. You can leave the **Authentication** method as Windows Mode. It is recommended to select **App Role** for **Security** purposes. Browse at the **Company** prompt and select the required SYSPRO database.

 **Note:**

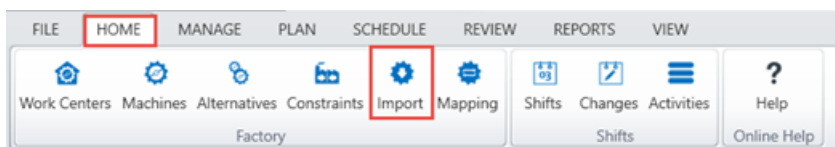
The **App Role** is related to how **SQL security** is assigned to a user. It is only required if the **Login** (either Windows or SQL) does not have rights via a database or server role i.e. (data reader, data writer, database owner, sysadmin). When using the **App Role**, the Login (either Windows or SQL) requires minimal security. The **Login** must be mapped to the SYSPRO Database **Public Role**. **App Role** is the most secure form of assigning security to users.

5. Select **OK**.

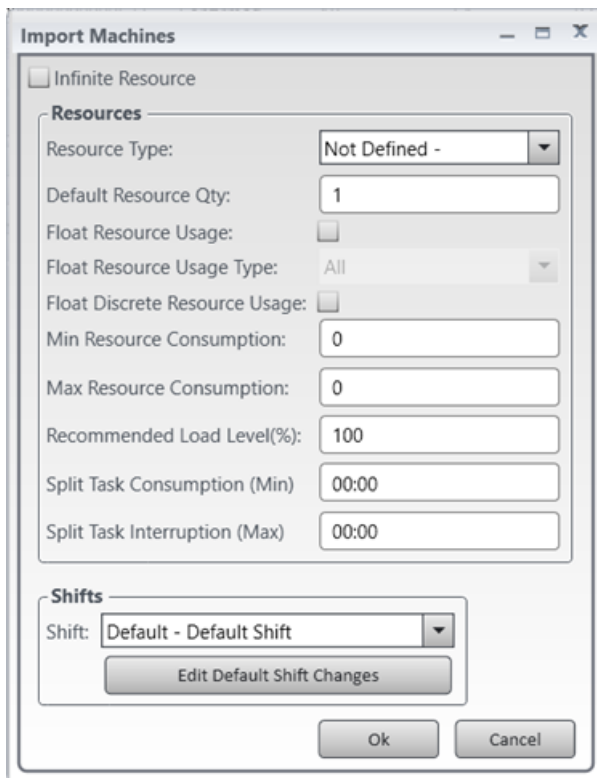
How to import machines

The following steps describe how to import machines in Visual APS.

1. Select **Home > Import** from the toolbar.



The **Import Machines** window is displayed.



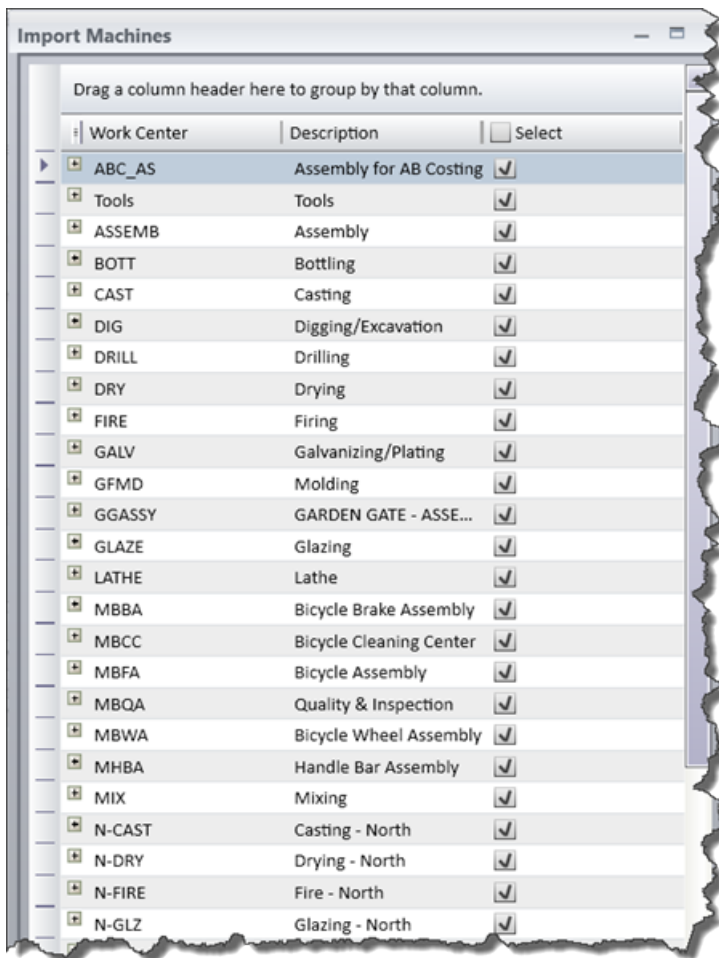
2. Select the resource type and default shift.

Select **Machines - Machine Hours** from the dropdown list.

Accept the **Default - Default Shift** for the **Shift**.

Select **Ok**.

The Machine Import window is displayed showing all the available machines to be imported.



3. Select the machine(s) to import into **Visual APS** and click **Ok**.

Importing machines is function that is done during an implementation. However, to continue with the MOM install you need to have at least one machine imported.

By default all the machines have been selected.

Deselect all the **Work Centers** by clicking on **Select**. Select **Work Center ABC_AS - Assembly for AB Costing**. Click on **Ok**.

4. Exit the program.

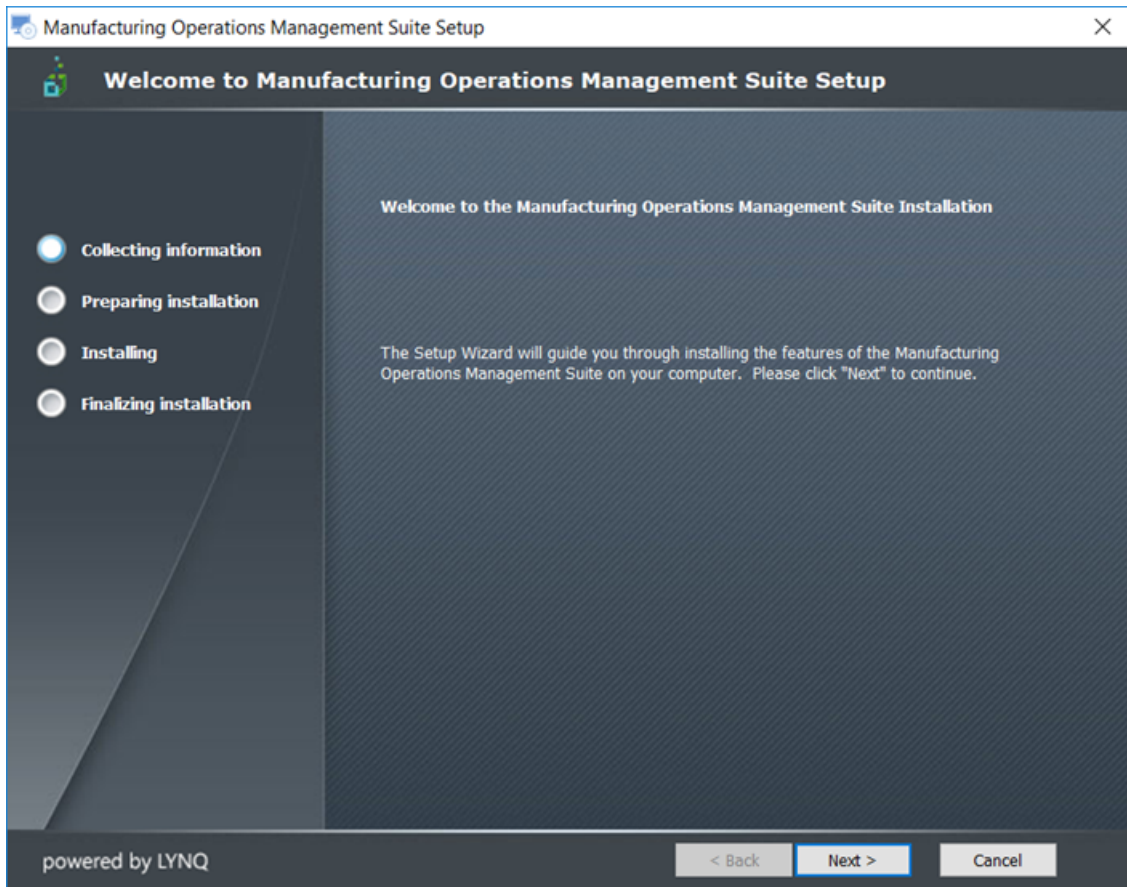
Installing Manufacturing Operations Management

The following steps describe how to Install Manufacturing Operations Management.

 You need to install **Visual APS** before installing MOM.

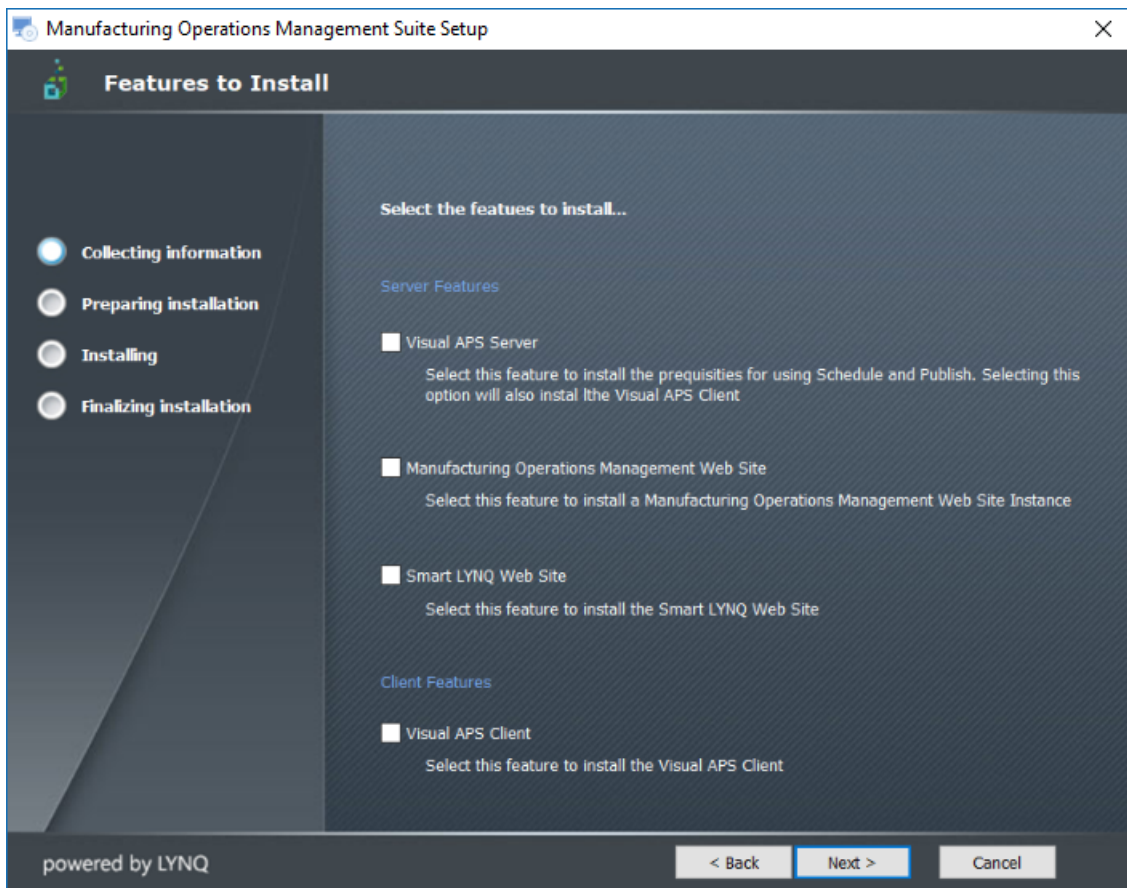
1. Logon as the administrator to the server where you have chosen to install the web site features of **Manufacturing Operations Management**.
2. Run the file name **Manufacturing Operations Management Suite.exe** to start the installation wizard.

The **Welcome to Manufacturing Operations Management Suite Setup** window is displayed.



3. Select **Next >**.

The **Features to Install** window is displayed.

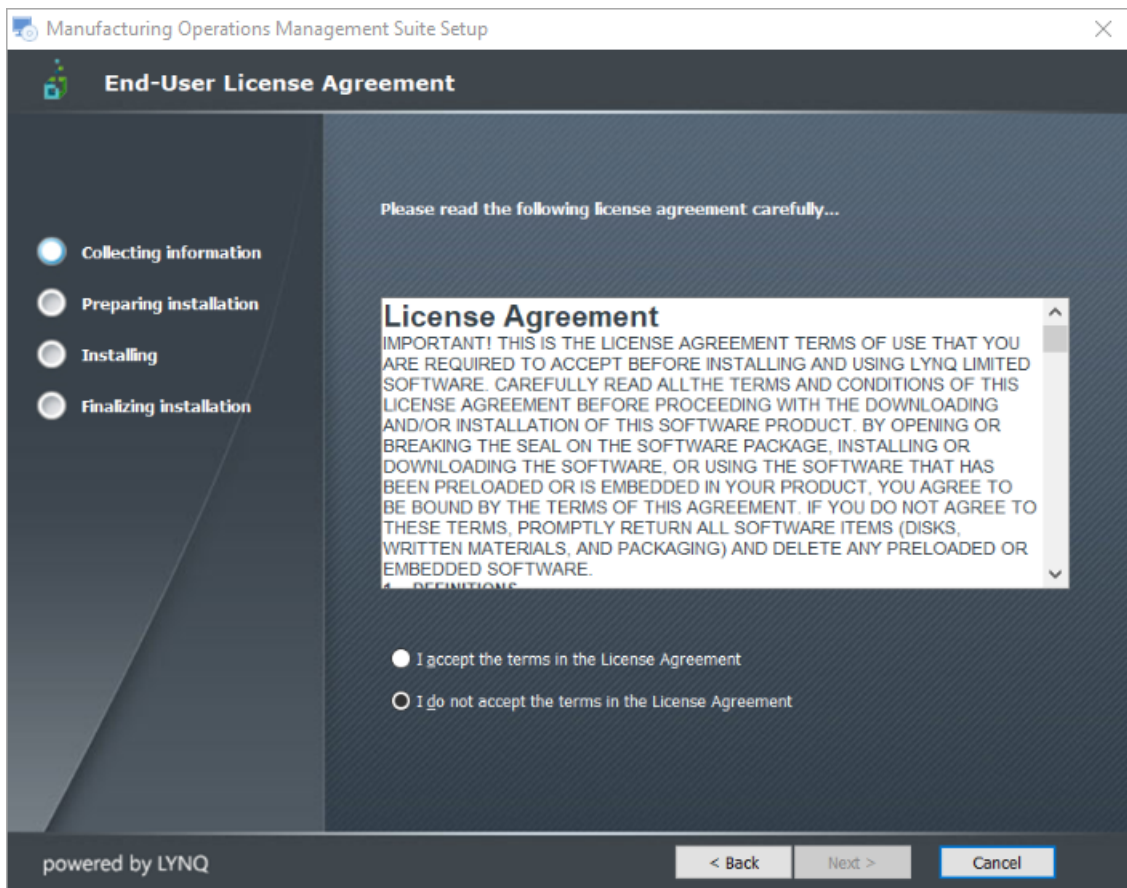


4. Select the feature(s) to be install based on the components you are licensed for and select **Next >**.

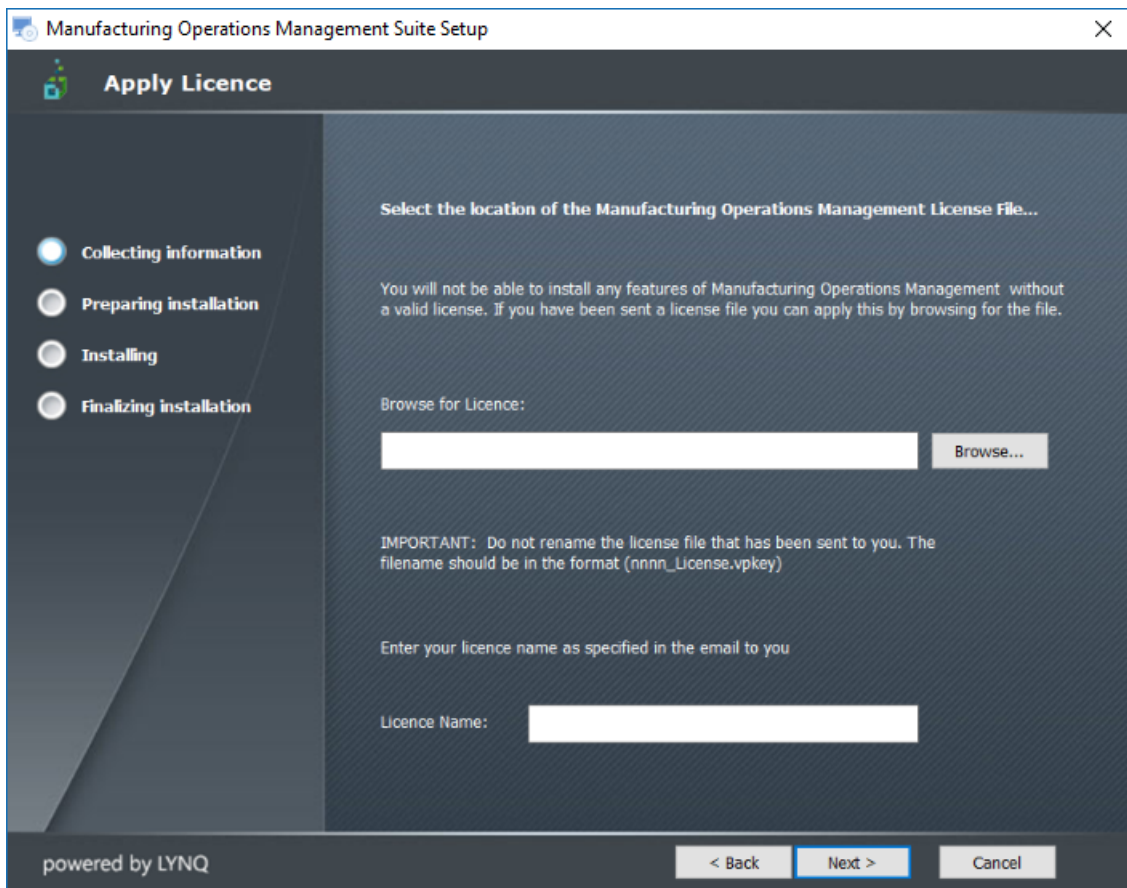
For our purposes, select **Server Features: Manufacturing Operations Management Web Site**.

Select **Next >** to continue.

The **End-User License Agreement** window is displayed.



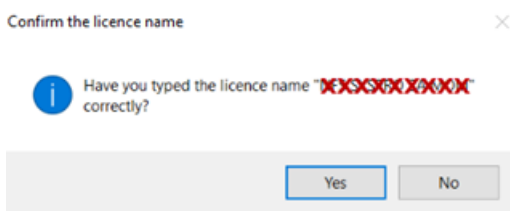
5. Select **I accept the terms in the License Agreement** and then **Next >**. The **Apply License** window is displayed.



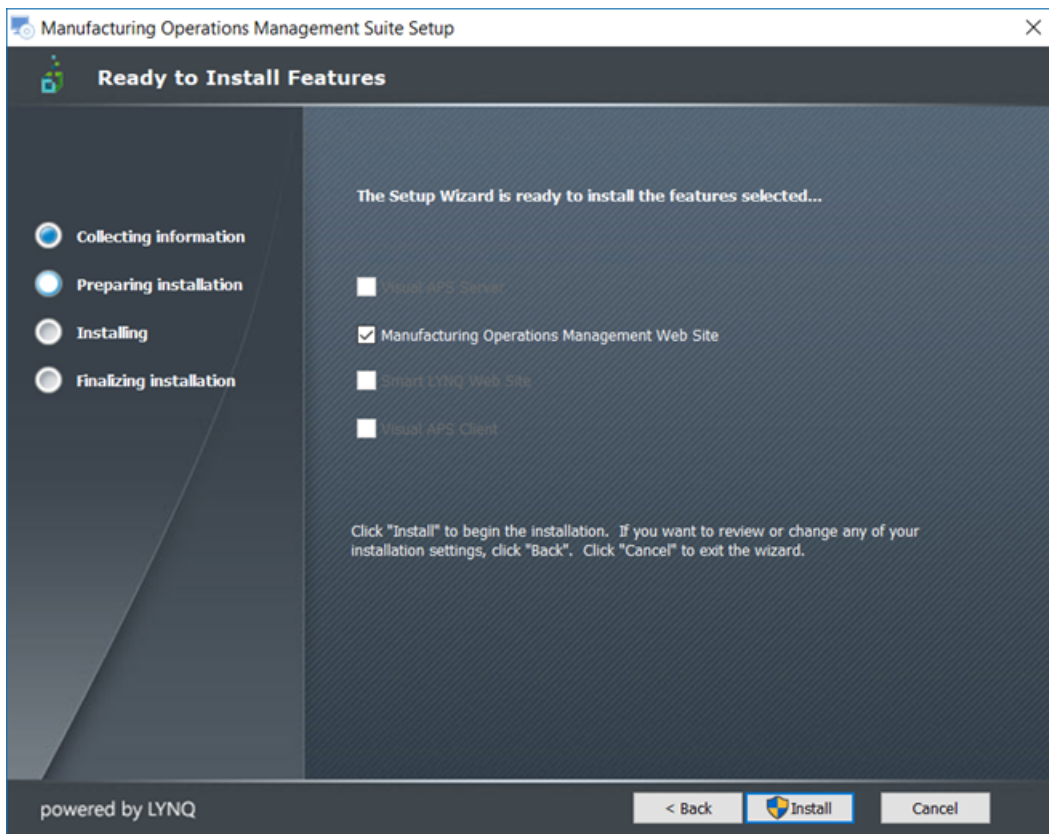
6. Browse and select the license file sent to you by **SYSPRO**. Do **NOT** rename the license file. Enter your license name as sent to you by **SYSPRO** and select **Next >** to continue.

 **Note:** The license Name is not case sensitive.

The **Confirm the License name** Window is displayed.

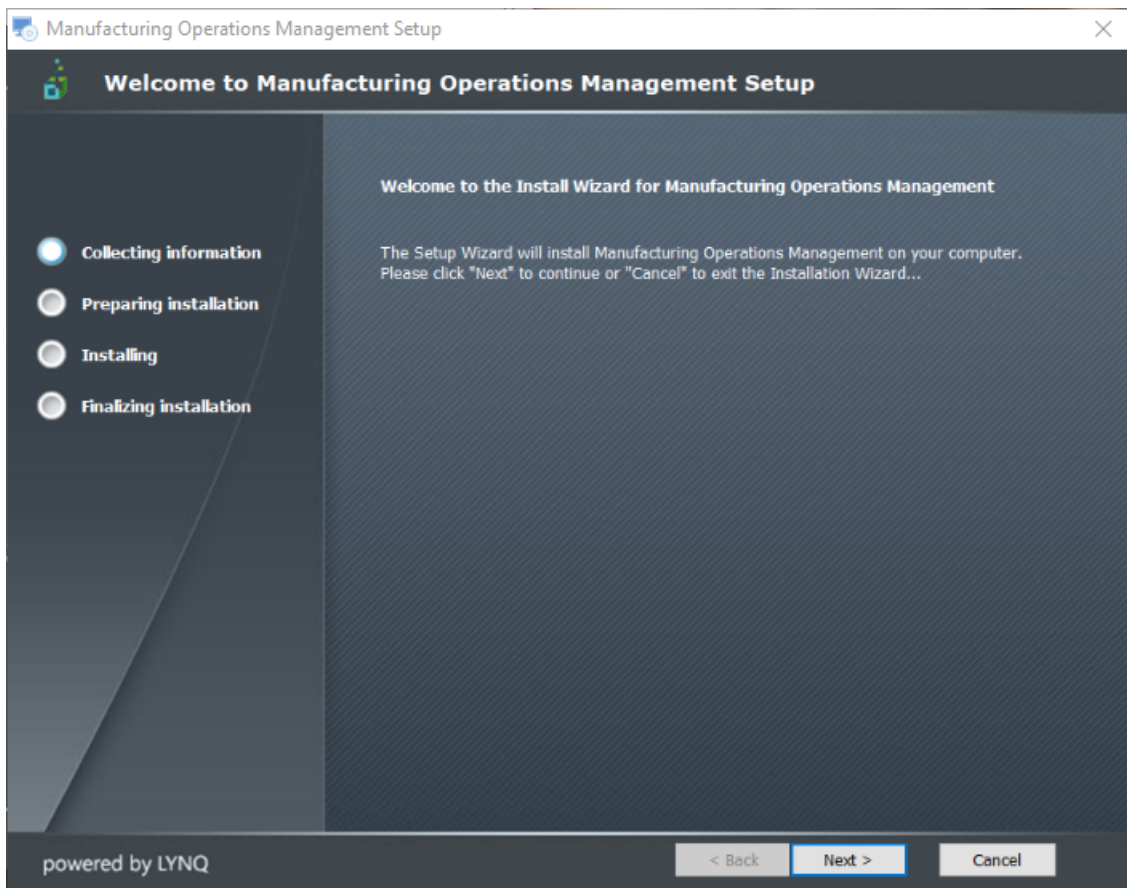


7. Confirm the license name entered and select **Yes**.
The **Ready to Install Features** window is displayed.



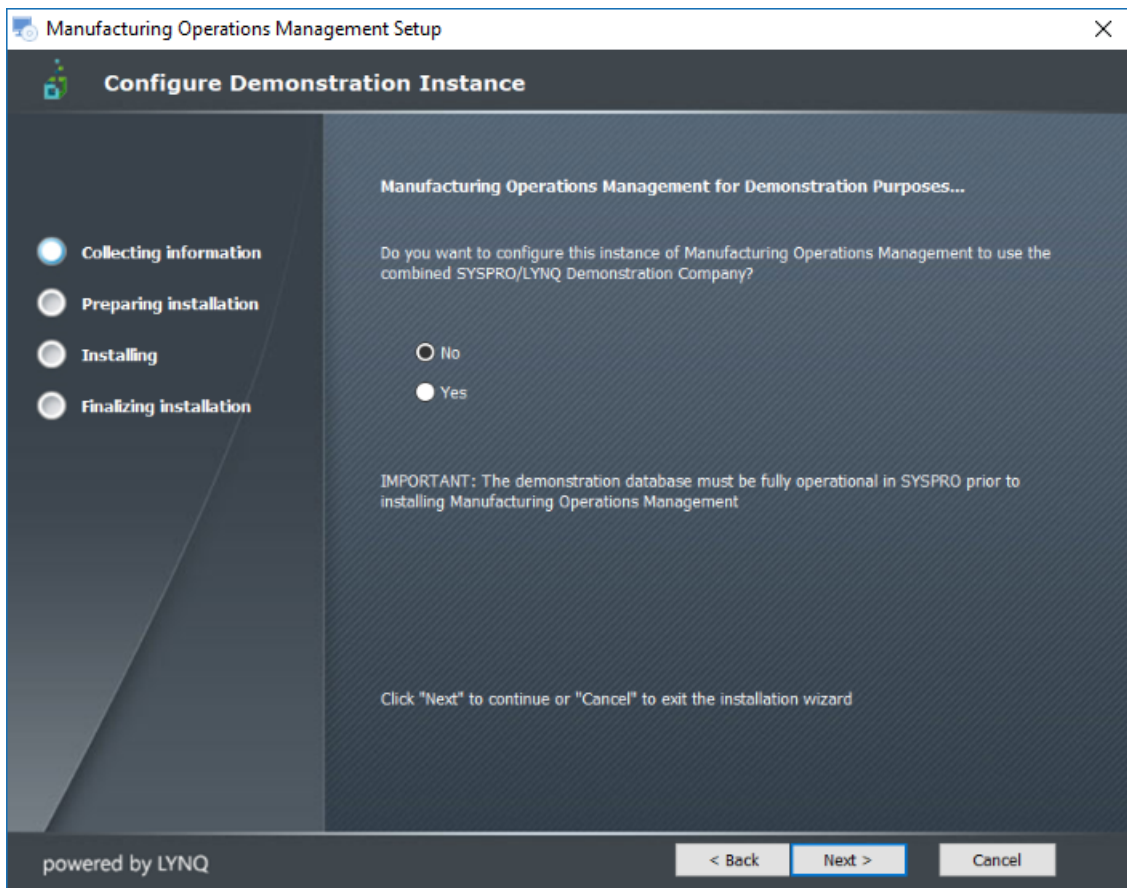
8. Select **Install**.

The *Welcome to Manufacturing Management Setup* window is displayed.



9. Select **Next >** to continue.

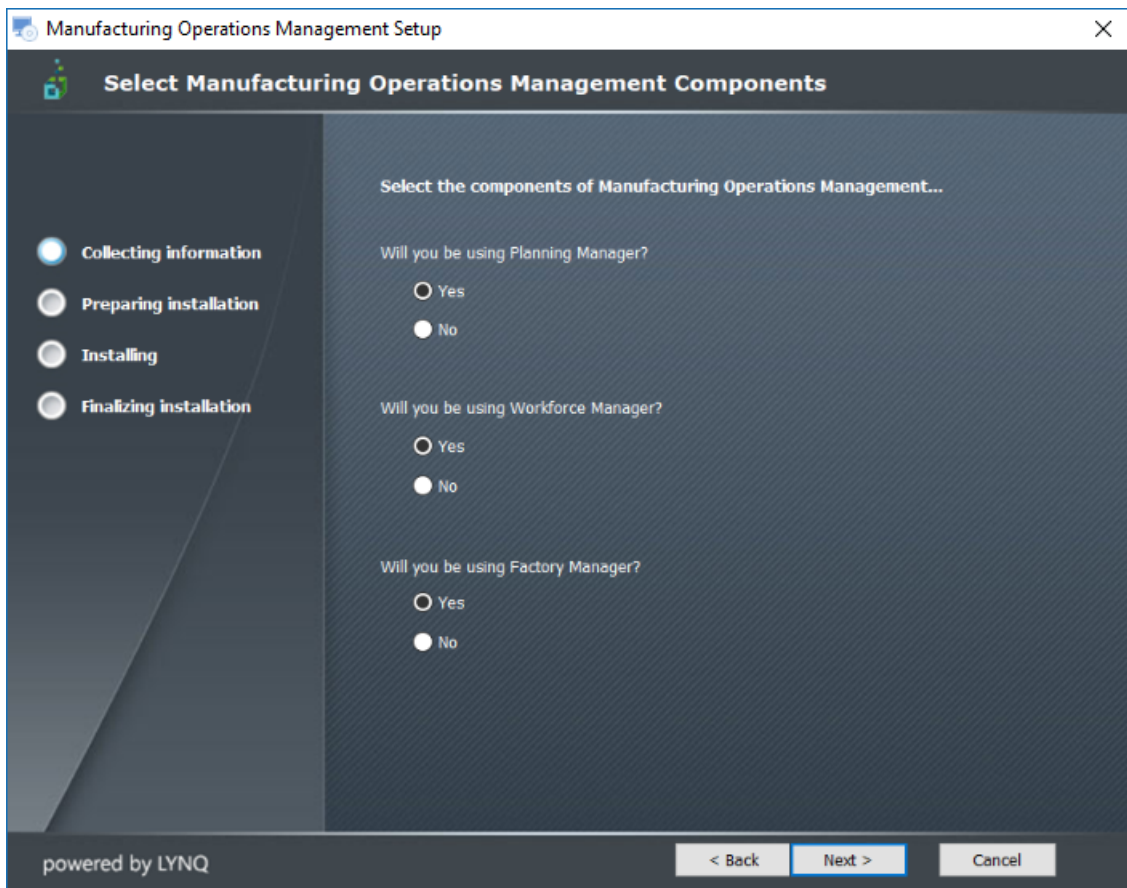
The ***Configure Demonstration Instance*** window is displayed.



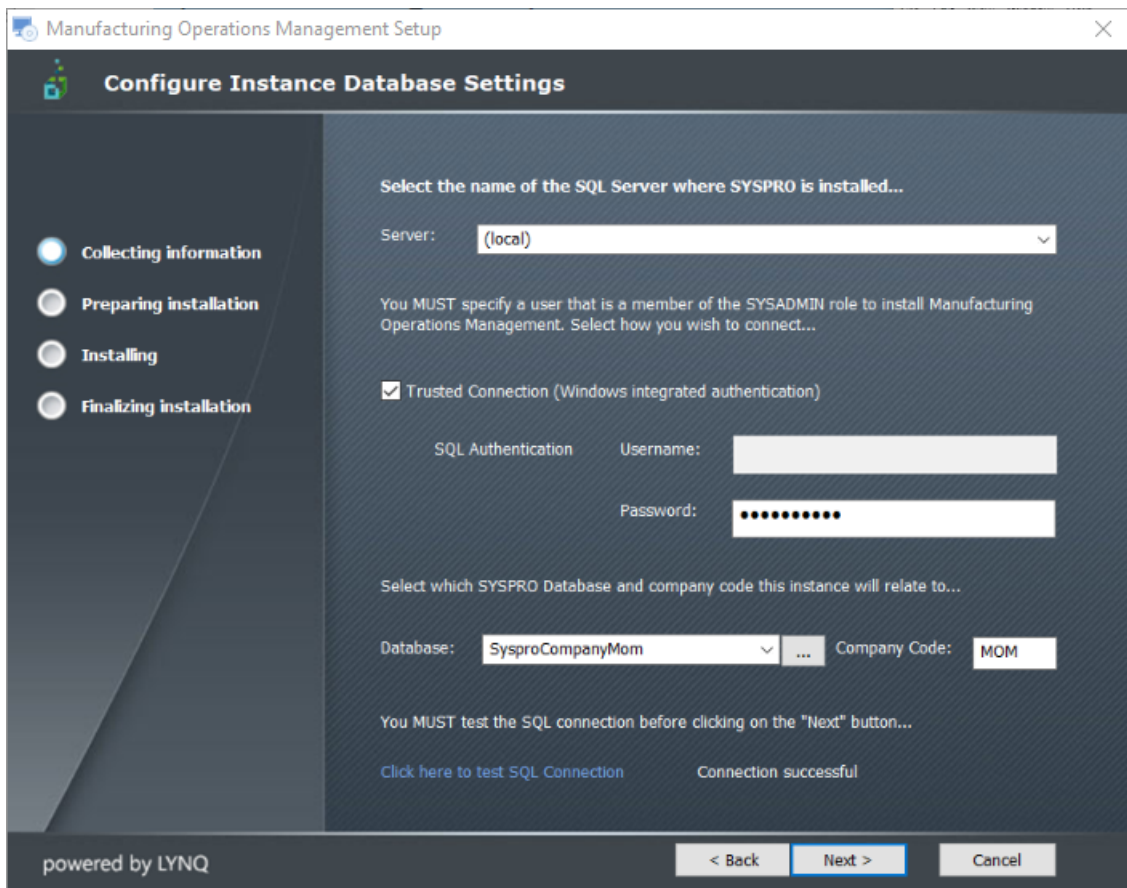
10. Select **Next >** to continue.

 **Note:** If you want to configure a demonstration instance you would select **Yes**.

The **Select Manufacturing Operations Management Components** window is displayed.




11. All components need to be installed. Select **Next >** to continue.
The ***Configure Instance Database Settings*** window is displayed.



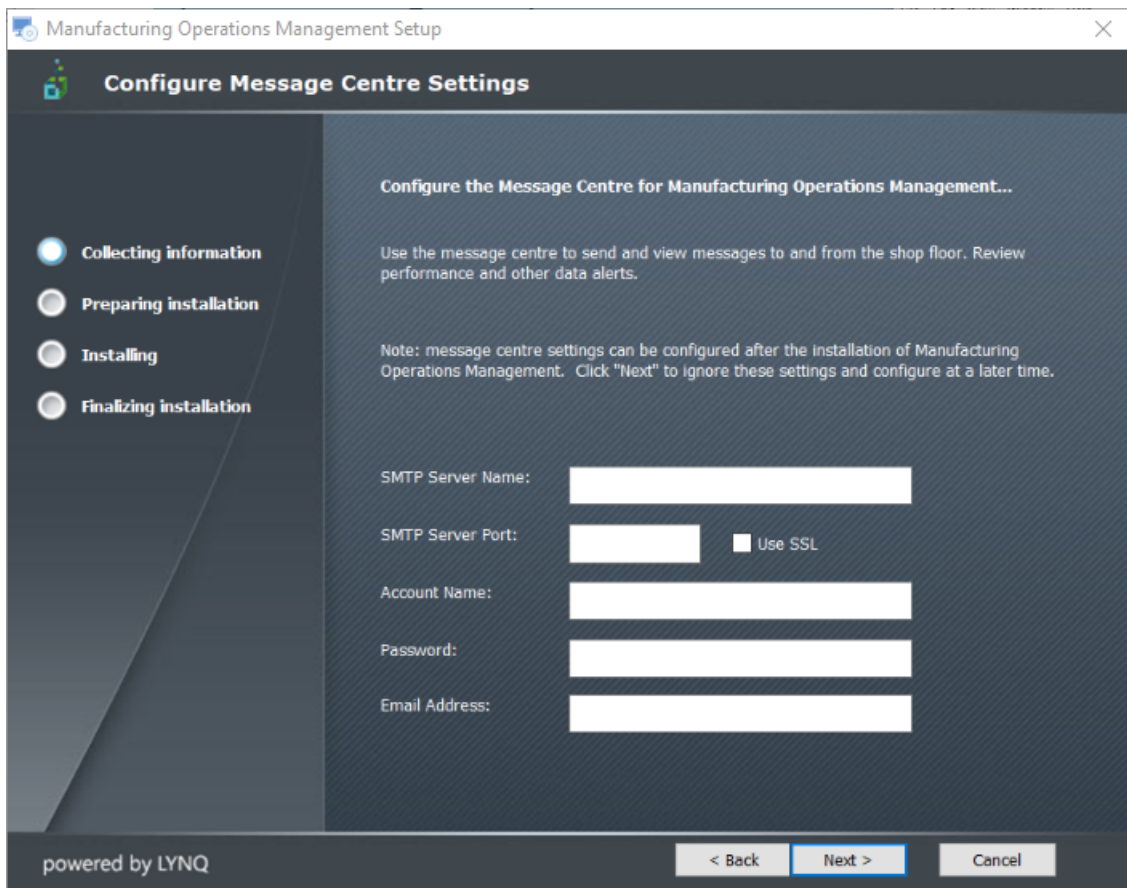
12. Enter the configuration information, test the connection and then select **Next >**.

At the **Database** field, browse and select **SysproCompanyMom**. Enter **MOM** at the **Company Code** field.

Test the **SQL Connection** and if successful select **Next >** to continue.

-  **Note:** The company code will become part of the URL and needs to be unique. MOM can be linked to multiple companies which are referred to as instances. Each instance needs to be licensed.

The **Configure Message Centre Settings** window is displayed.

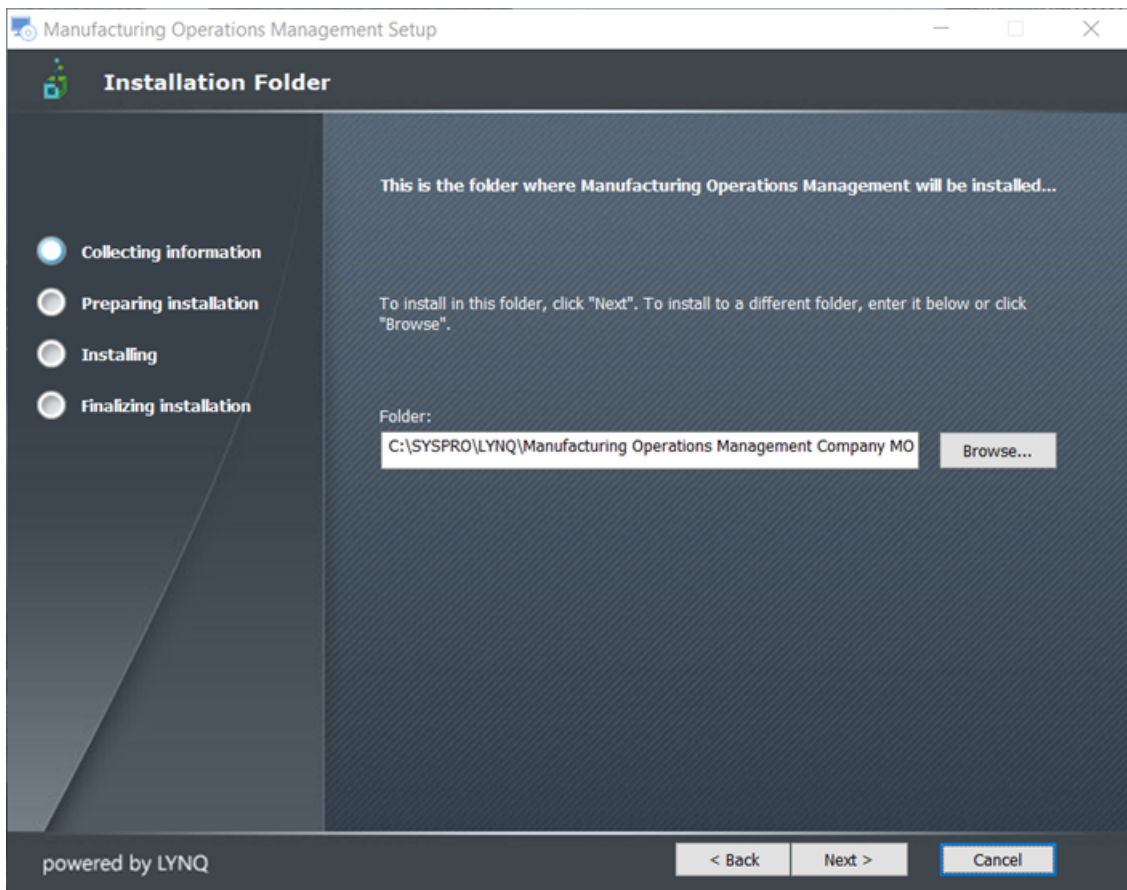


13. If you want to send messages to and from the **Shop Floor** enter your **SMTP** details and then select **Next >**.

For our purposes you will not be sending messages to and from the Shop Floor. Select **Next >** to continue.

You will be able to set up SMTP changes to this later if required.

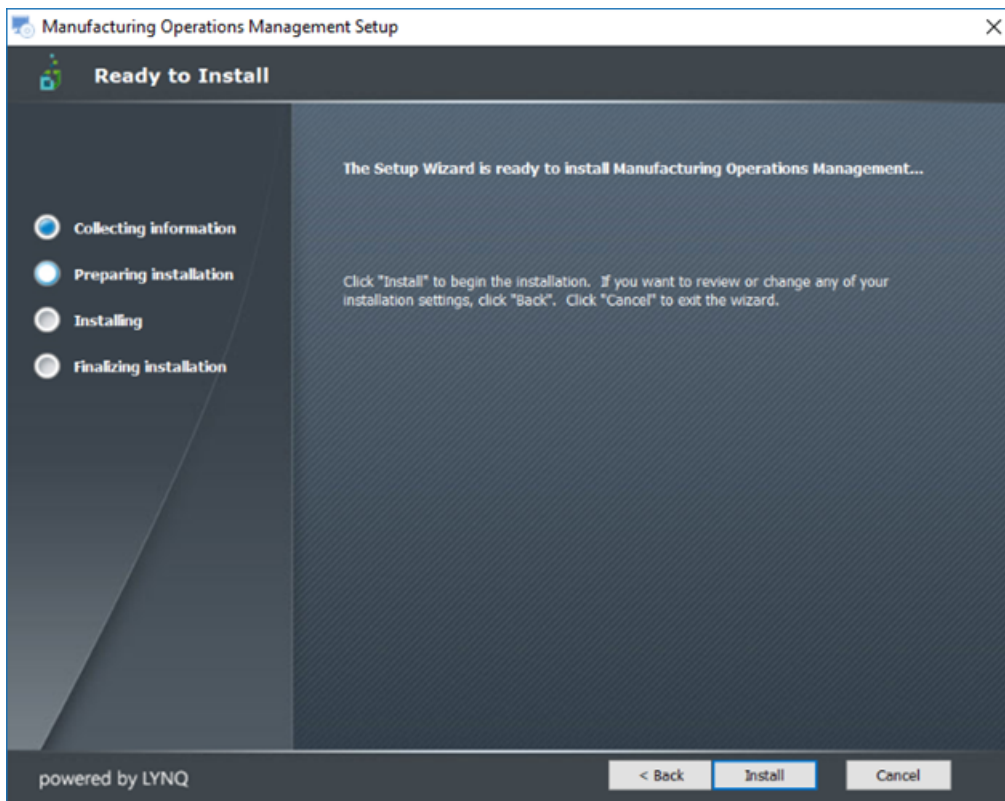
The **Installation Folder** window is displayed.



14. Browse for the folder where you want to install **MOM** and select **Next >** to continue. It is recommended to use the default folder.

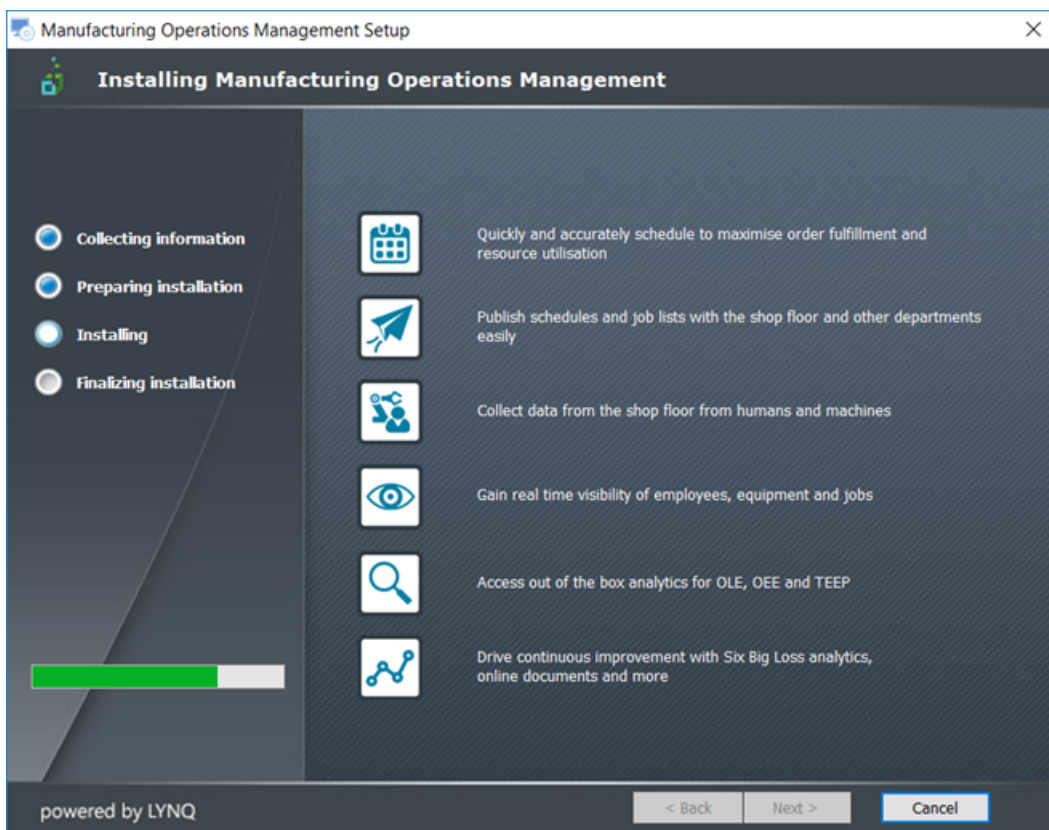
 **Note:** The **MOM installation Folder** is unique to each company.

The **Ready to Install** window is displayed.

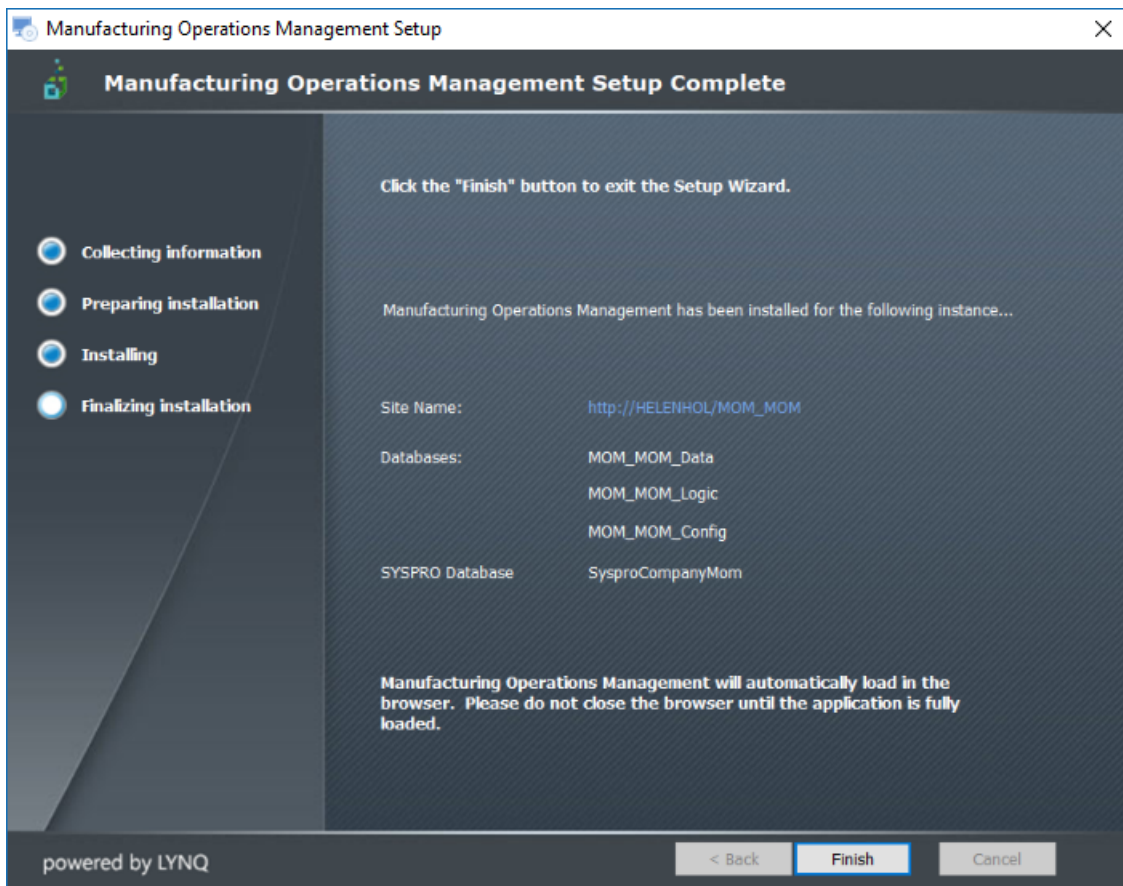


15. Select **Install**.

The *Installing Manufacturing Operations Management* window is displayed during the install.

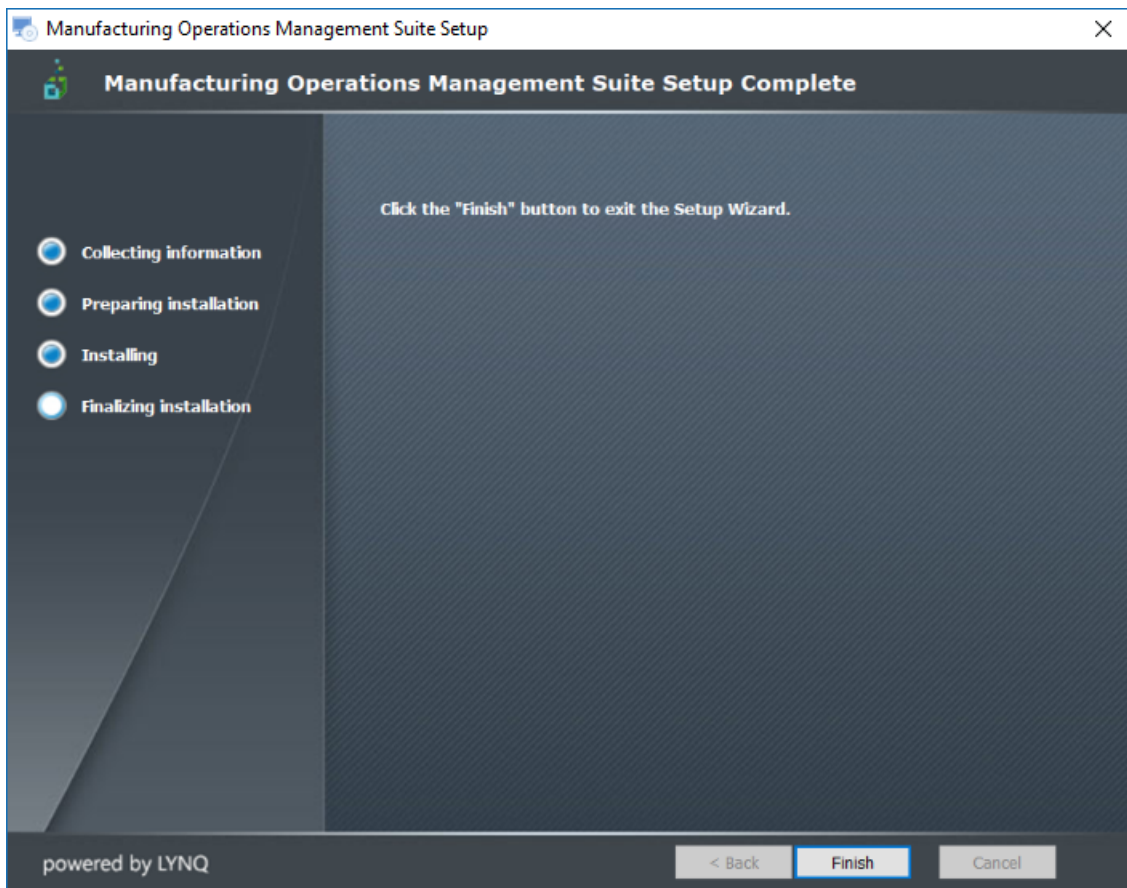


The *Manufacturing Operations Management Setup Complete* window is displayed.



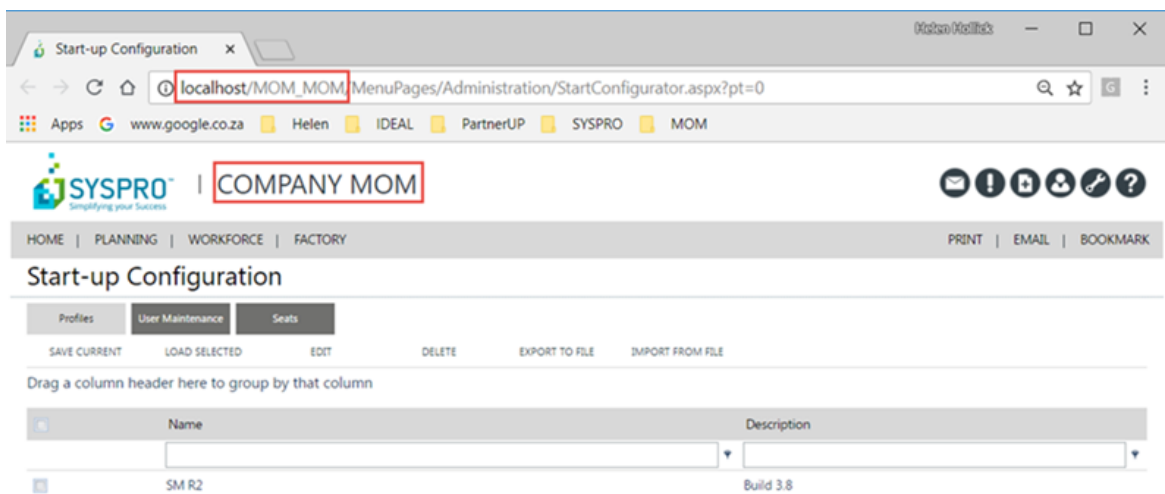
16. Select **Finish**.

The *Manufacturing Operations Management Suite Setup Complete* window is displayed.



17. Select **Finish**.

The **MOM Web Site** will open with a URL **localhost/MOM_MOM**. The last three characters represent the **SYSPRO Company ID**.



Note:

Before you continue with the **SmartLYNQ** install you need complete the following tasks in MOM:

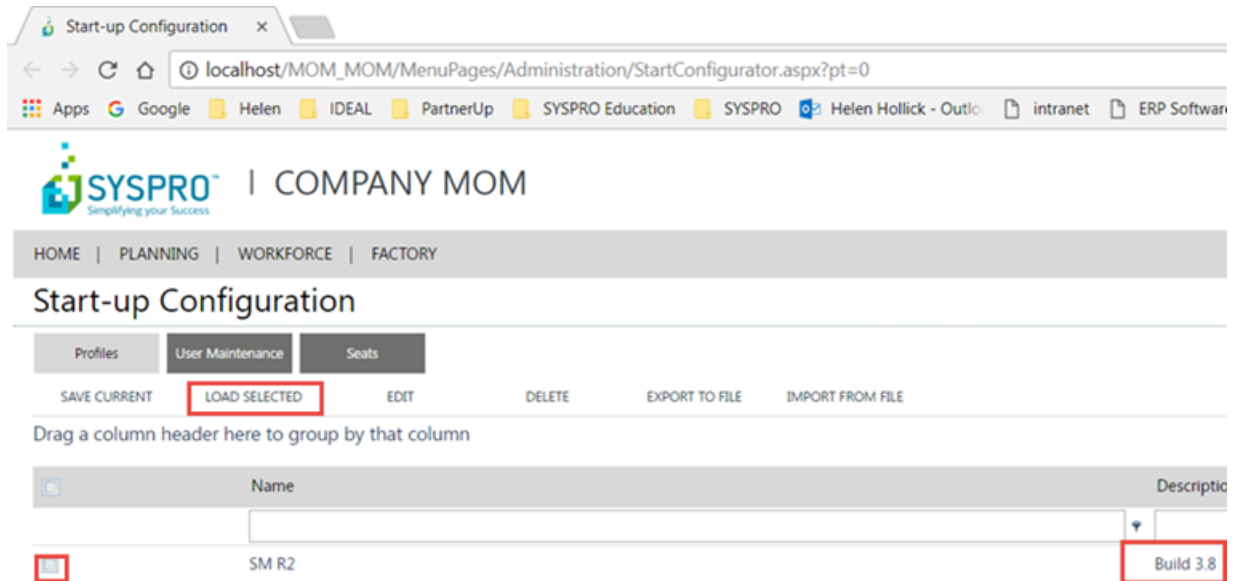
- Configuring a Profile

- Importing and Activating Seats.

Configuring a MOM profile

The following steps describe how to associate a MOM build to a Profile.

1. When the first install of **Manufacturing Operations Management (MOM)** is complete, it will load the **MOM Web Site** so that you can perform some **Start-up Configuration**.

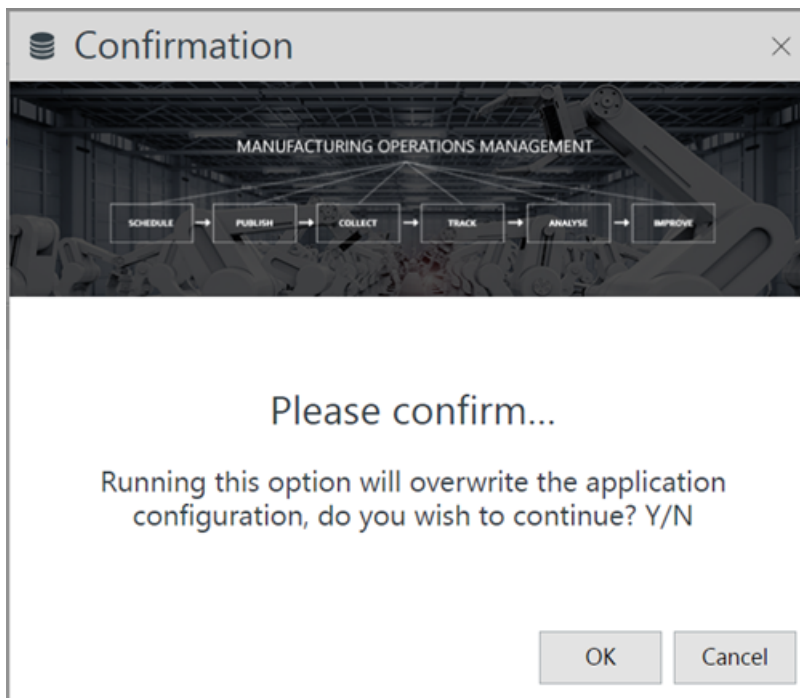


1. The installer comes with a the default build and this needs to be associated with the **Profile**.

Associate the **Build 3.8** to the **Profile** and then select **LOAD SELECTED**.

- Note:** The Profile contains a number of defaults, system configurations so that you don't have to configure everything from scratch.

The **Confirmation** window is displayed.



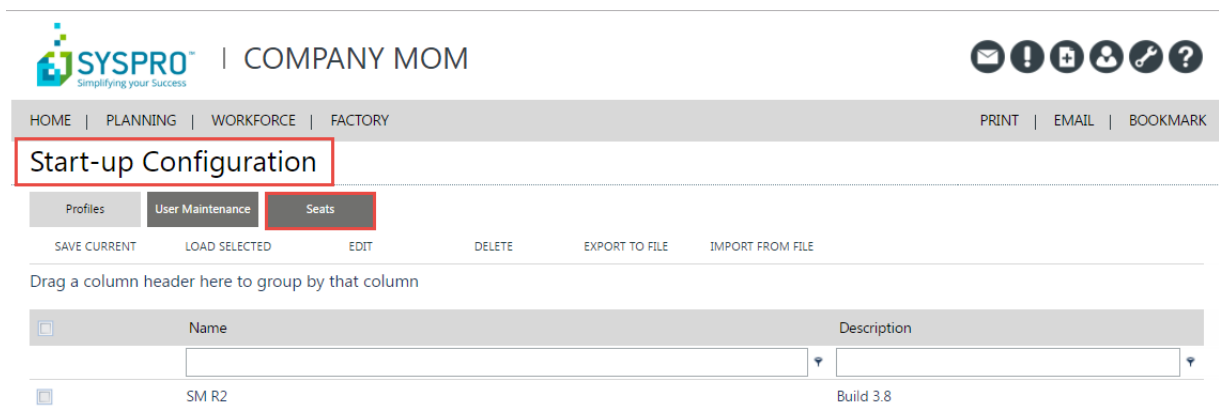
2. Select **OK**.

You now need to move onto the importing one or more seats (employees and/or equipment) and activating them. (**Task Importing and Activating Seats**).

Importing and activating seats

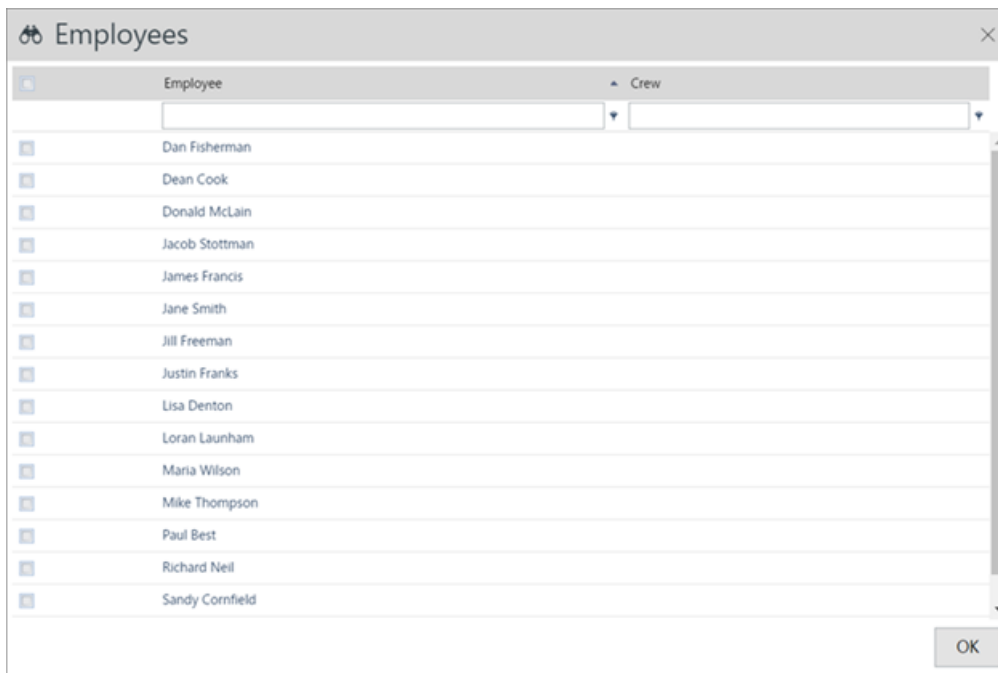
The following steps describe how to import and activate seats.

- i** Seats refer to **Employees** and **Equipment**. MOM is licensed by the number of seats. From the previous task the **Start-up Configuration** is still open.



1. From **Start-up Configuration** select **Seats**, select **IMPORT** and then **IMPORT EMPLOYEES**.

The **Employees** window is displayed.



2. Select to import the **Employees** and the select **OK**.

As with Machines you normally import Employees during implementation. You will only import one employee and that is Dan Fisherman. Select **Dan Fisherman** and **OK**.

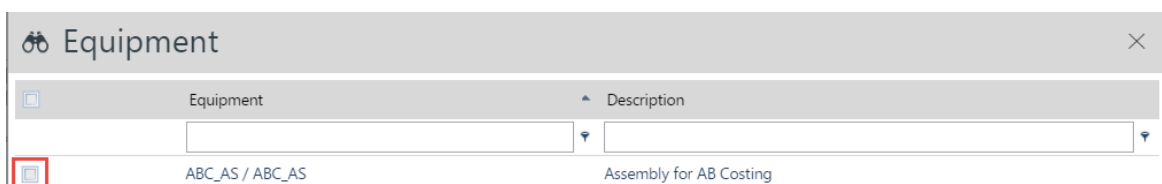
Note: These employee records come directly from the SYSPRO database. At this stage you don't have to import all employees. Even though the employees have been imported it does not mean that they have consumed the seat count. The license in the window below shows that the seat allowance is 300, but there are not **Active** seats. Only when you **Active** the record will the seats be consumed.

The selected employees have been imported.

3. From **Start-up Configuration** select **Seats**, select **Import** and then **Import Equipment**.

Note: There is only one record that was imported into Visual APS.

The **Equipment** window is displayed.



4. Select the equipment to import and then select **OK**.

SYSPRO | COMPANY MOM

HOME | PLANNING | WORKFORCE | FACTORY

PRINT | EMAIL | BOOKMARK

Start-up Configuration

Profiles | **User Maintenance** | Seats

Current user: [Helen.Hollick] helen.hollick

NEW EDIT DELETE IMPORT ACTIVATE DEACTIVATE EXPORT FILTERS

Category	Name	Workbench ID	Source	User	Active?
Employee	Dan Fisherman	110	ERP	Workbench	No
Equipment	ABC_AS / ABC_AS	1	ERP	Manual	No

5. Select all the **Employees** and **Equipment** and then **Activate**.

Note: You will notice that the **Active?** column is populated with **Yes**. Also the **Active seats** count is no longer **0**. You will require a seat license for each employee and equipment that are activated.

SYSPRO | COMPANY MOM

HOME | PLANNING | WORKFORCE | FACTORY

PRINT | EMAIL | BOOKMARK

Start-up Configuration

Profiles | **User Maintenance** | Seats

Current user: [Helen.Hollick] helen.hollick

NEW EDIT DELETE IMPORT ACTIVATE DEACTIVATE EXPORT FILTERS

Category	Name	Workbench ID	Source	User	Active?
Employee	Dan Fisherman	110	ERP	Workbench	Yes
Equipment	ABC_AS / ABC_AS	1	ERP	Manual	Yes

Page 1 of 1 (2 items) | Page size: 50

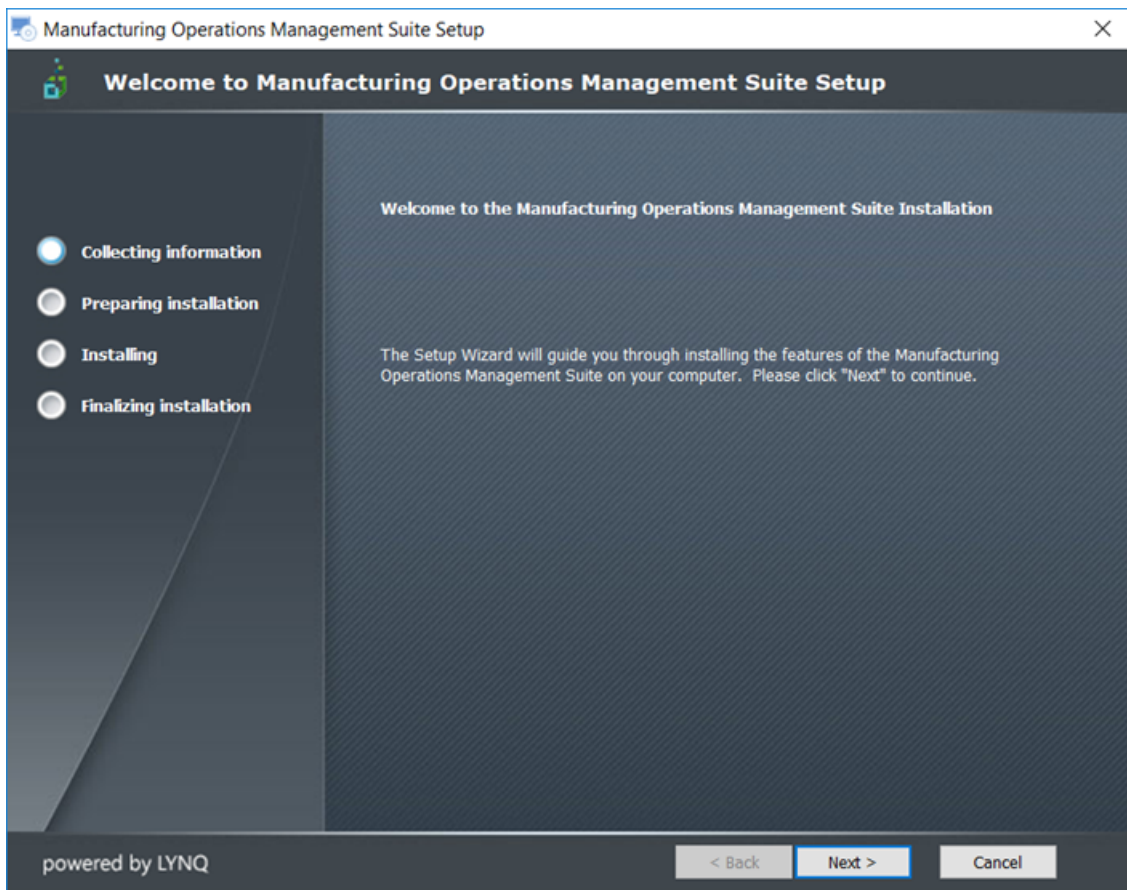
Seat allowance = [300]
Active seats: 2

Installing SmartLYNQ

The following steps describe how to install SmartLYNQ.

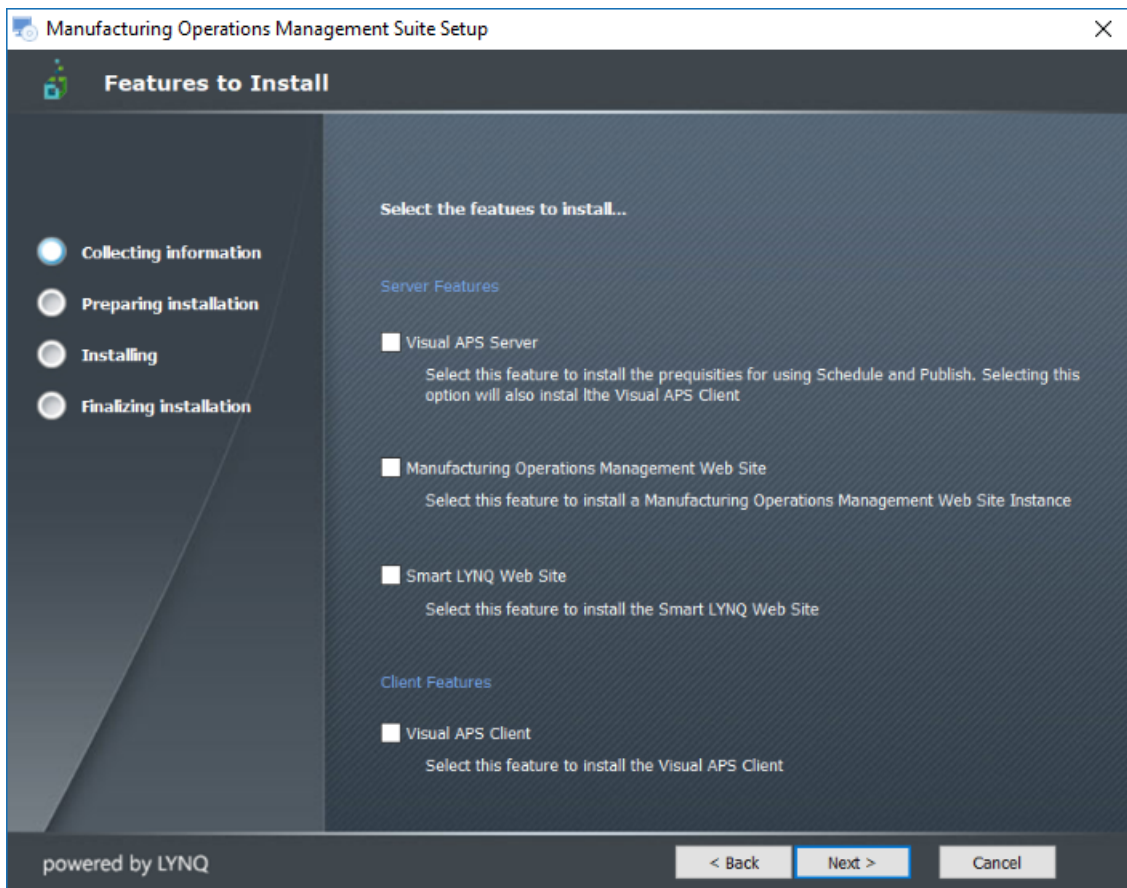
1. Logon as the administrator to the server where you have chosen to install the web site features of **Manufacturing Operations Management**.
2. Run the file name **Manufacturing Operations Management Suite.exe** to start the installation wizard.

The **Welcome to Manufacturing Operations Management Suite Setup** window is displayed.



3. Select **Next >**.

The **Features to Install** window is displayed.

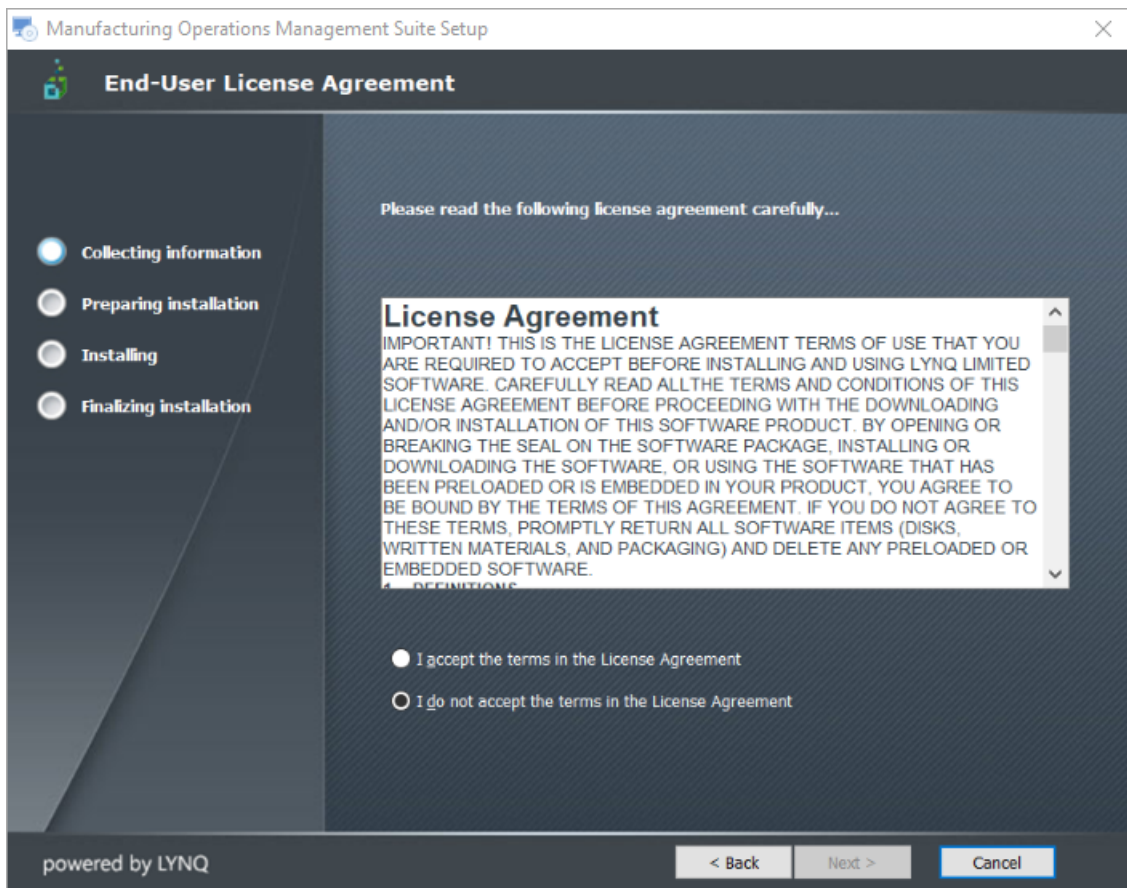


4. Select the features to be install based on the components you are licensed for and select **Next >**.

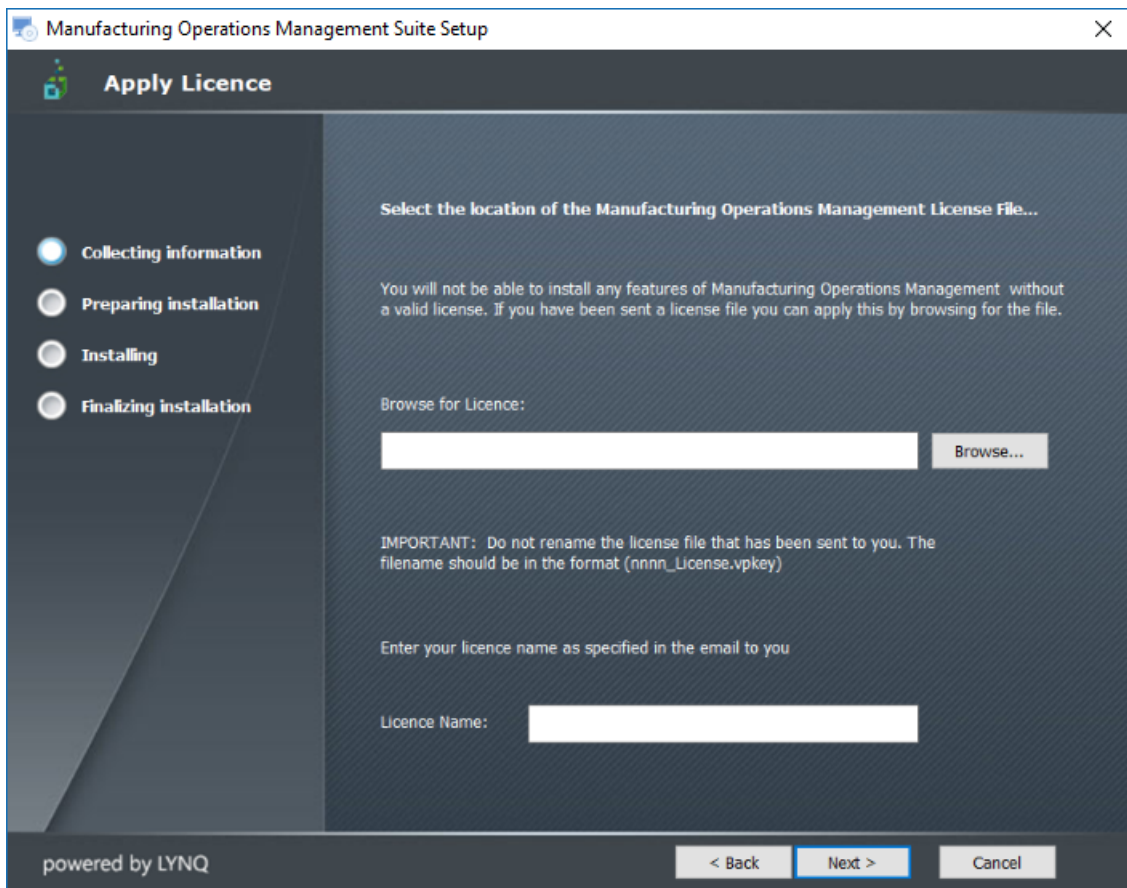
For our purposes, select **Server Features: SmartLYNQ Web Site**.

Select **Next >** to continue.

The **End-User License Agreement** window is displayed.



5. Select **I accept the terms in the License Agreement** and then **Next >**. The **Apply License** window is displayed.



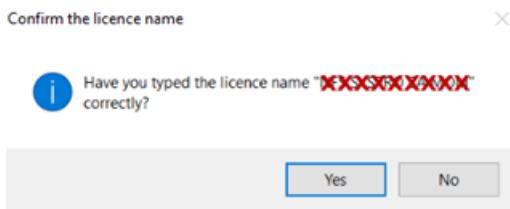
6. Browse and select the license file sent to you by SYSPRO. Enter your license name as sent to you by SYSPRO and select **Next >** to continue.

 **Note:**

Do **NOT** rename the license file.

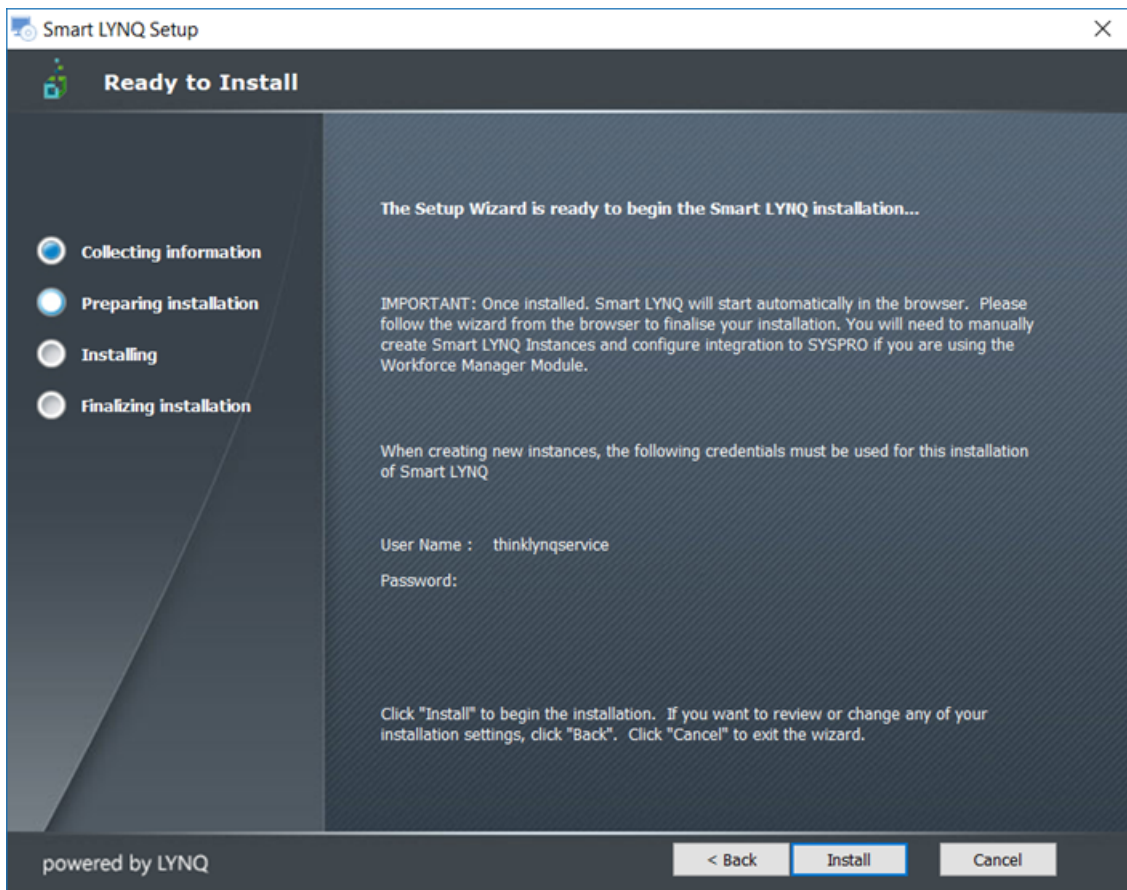
The License Name is not case sensitive.

The **Confirm the License name** Window is displayed.



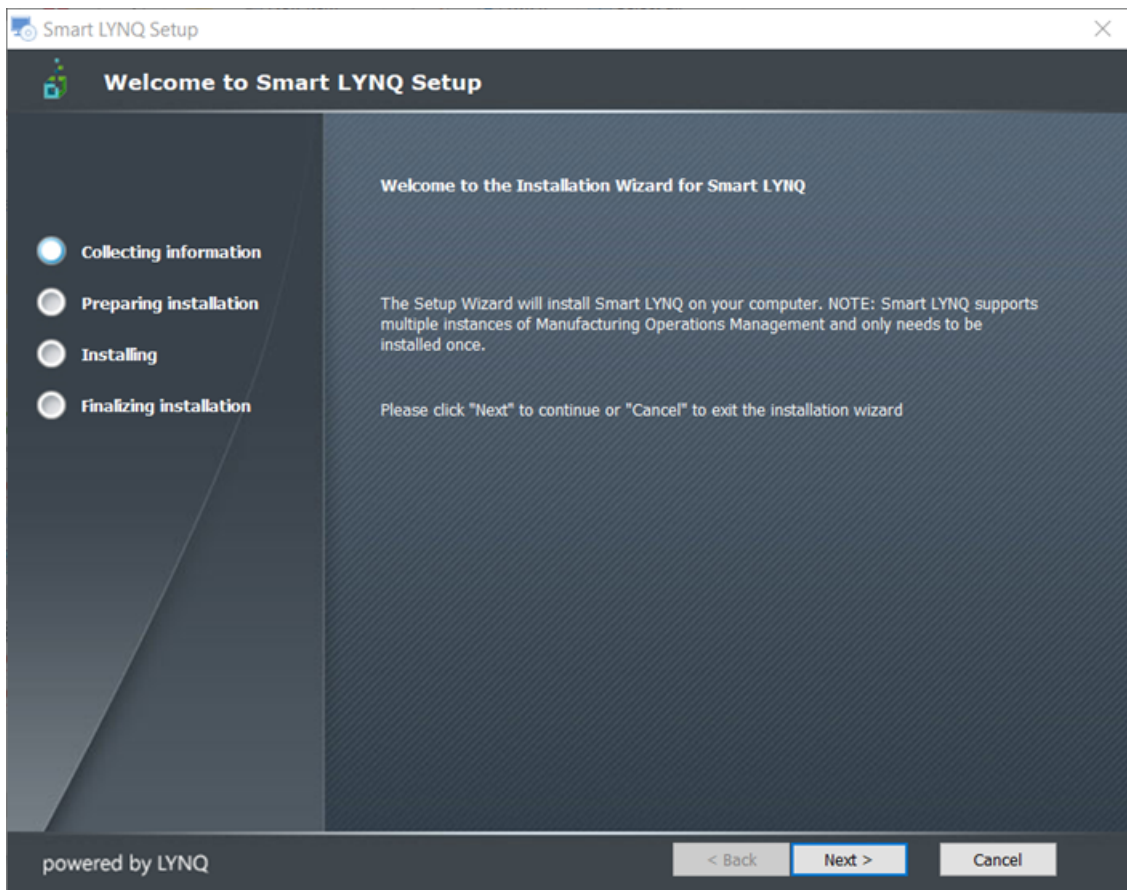
7. Confirm the license name entered and select **Yes**.

The **Ready to Install Features** window is displayed.



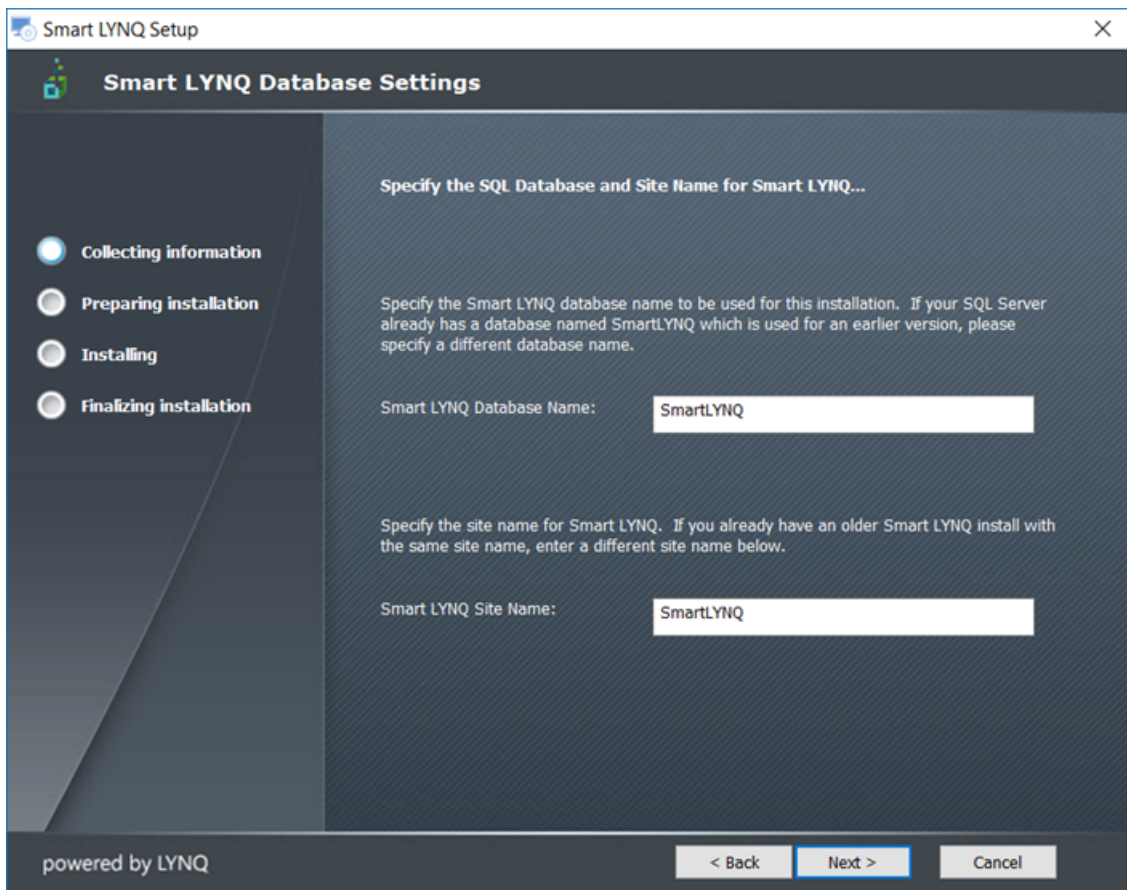
8. Select **Install**.

The *Welcome to SmartLYNQ Setup* window is displayed.



9. Select **Next >** to continue.

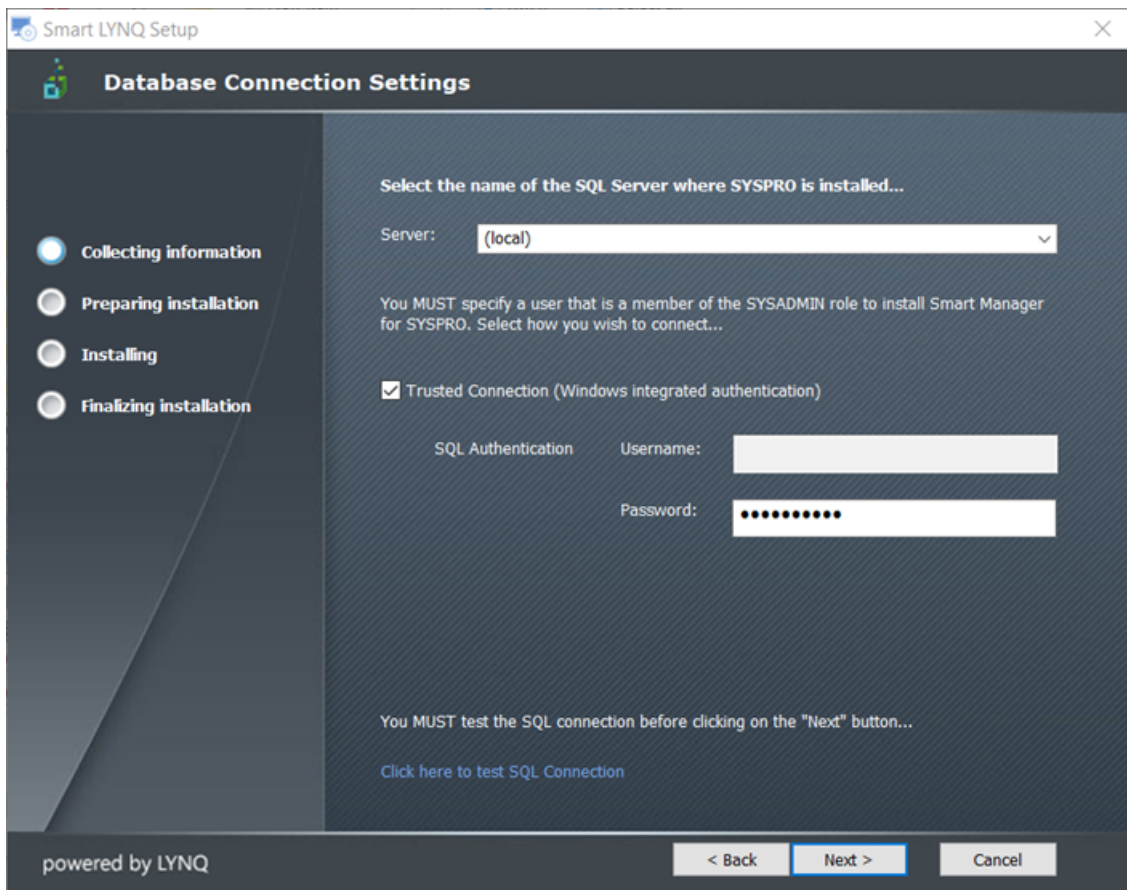
The **SmartLYNQ Database Settings** window is displayed.



10. Enter the **SmartLYNQ database** and **Site Name** and then select **Next >** to continue. Accept the defaults.

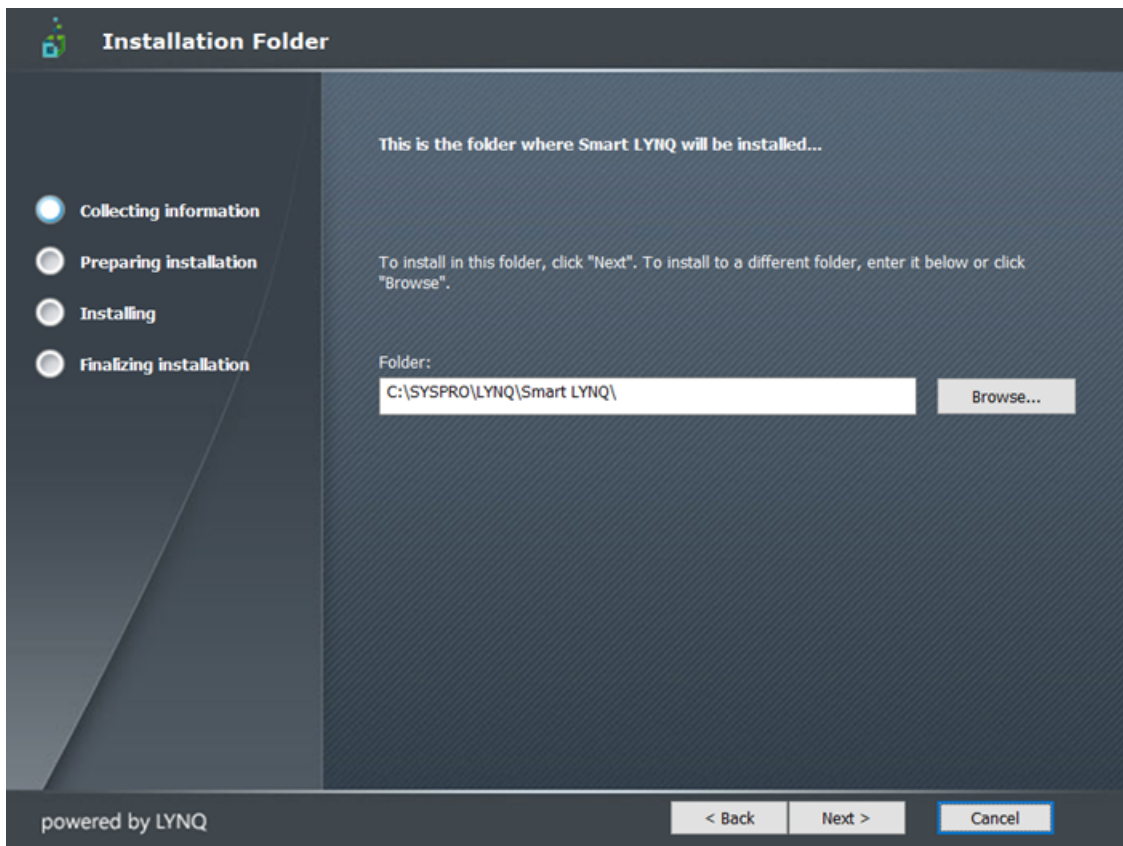
 **Note:** SmartLYNQ handles many companies.

The **Database Connection Settings** window is displayed.



11. Accept or enter the correct information, test the **SQL connection** and if successful select **Next >**.

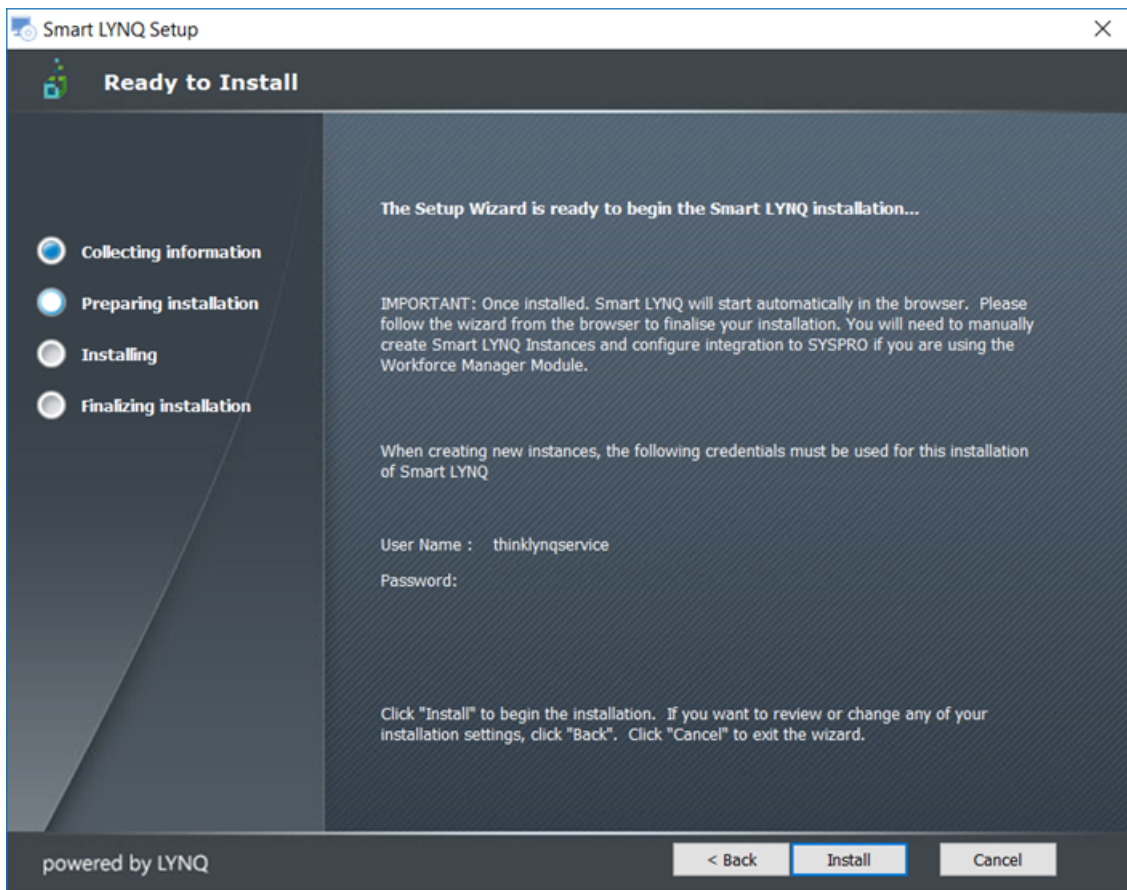
The *Installation Folder* window is displayed.




12. Browse for the folder where you want to install **SmartLYNQ** and select **Next >** to continue.

It is recommended to use the default folder.

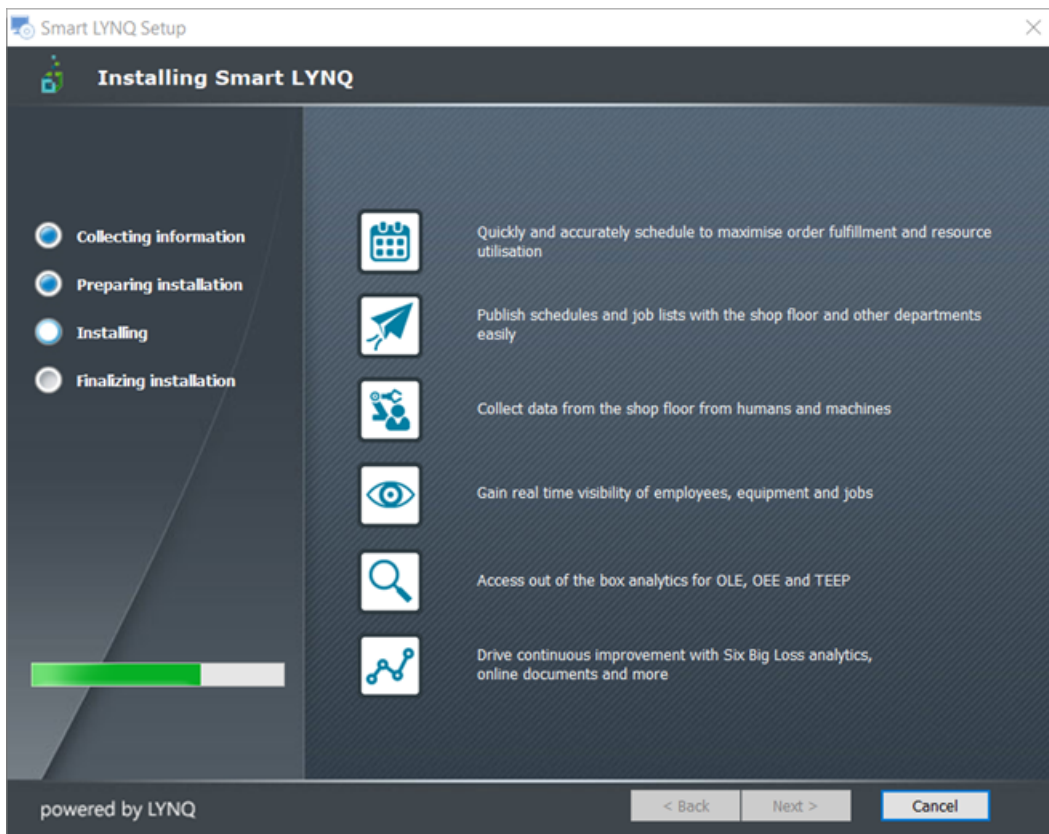
The **Ready to Install** window is displayed.



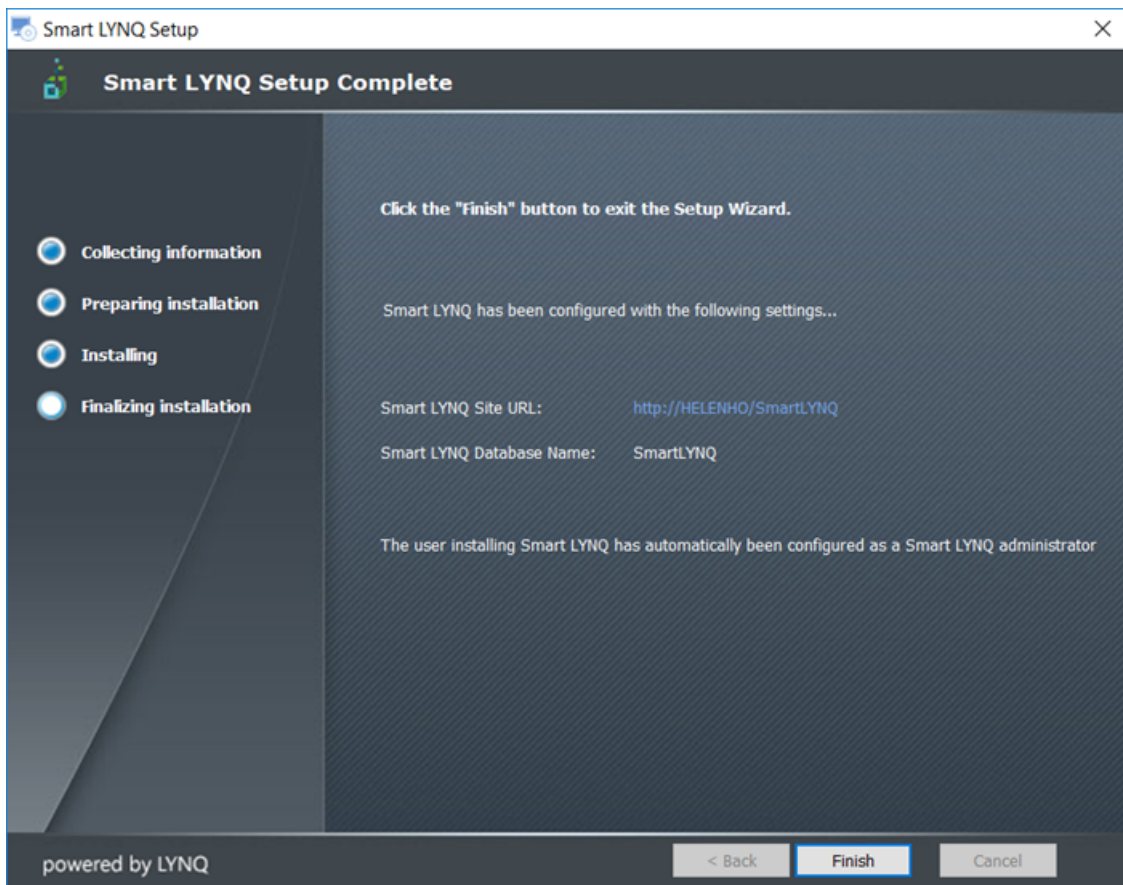
13. Write down the **User Name** and **Password** and select **Install**.

 **Note:** The install of **Visual APS** has created a **SQL account** called **thinklynqservice**. This account is key to operation of SmartLYNQ and MOM.

The **Installing SmartLYNQ** window is displayed during the install.

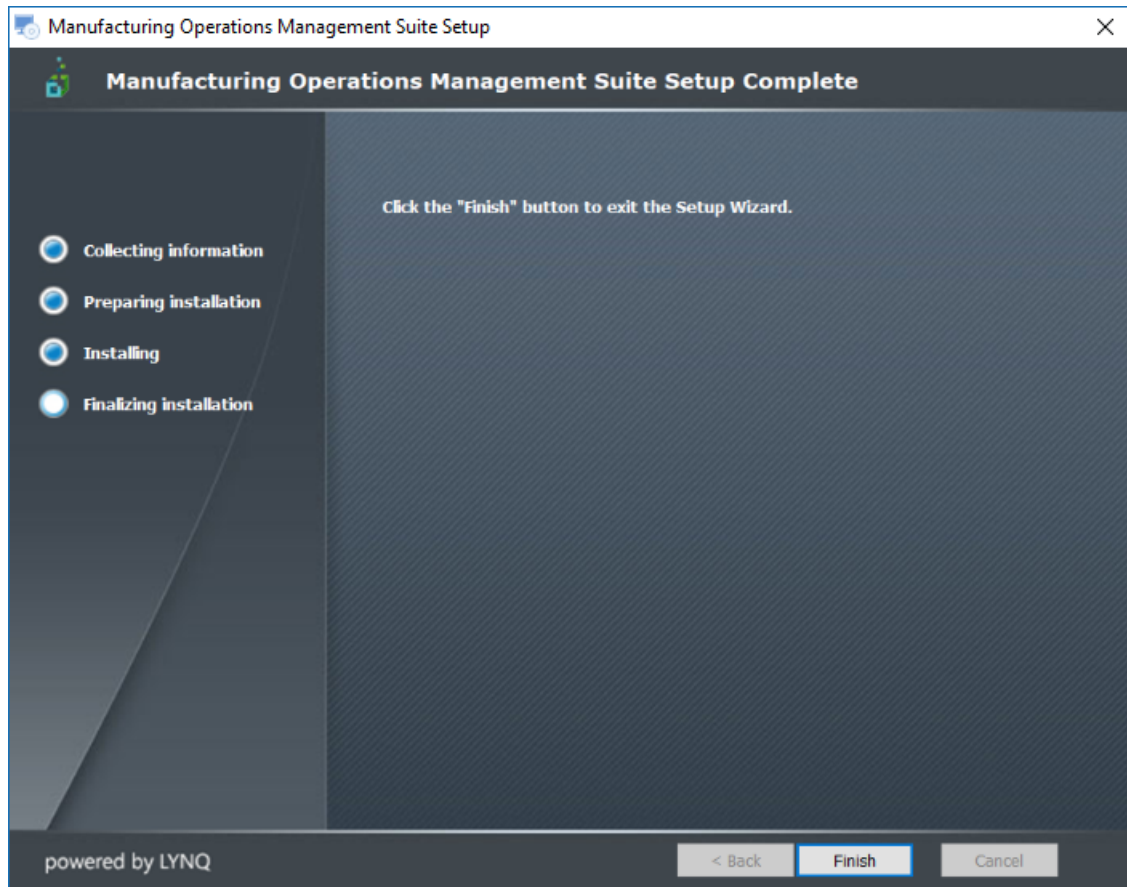


The *SmartLYNQ Setup Complete* window is displayed.




14. Select **Finish**.

The *Manufacturing Operations Management Suite Setup Complete* window is displayed.



15. Select **Finish**.


 **Note:** The install of **Visual APS** has created a SQL account called **thinklynqservice**. This account is key to operation of SmartLYNQ and MOM.

When the install completes SmartLYNQ will be loaded.

Configuring SmartLYNQ

The following steps describe how to configure SmartLYNQ.

1. The **SmartLYNQ** install is complete and the Web Service is displayed.

 **Note:** The install of **Visual APS** has created a **SQL account** called **thinklynqservice**. This account is key to the operation of **SmartLYNQ** and **MOM**.

The *SmartLYNQ Create Instance* information is displayed.

2. Enter the required information to create an instance and select **Save**.

Enter the following information:

Under **General** enter *SYSPRO Company MOM* at the **Name** field.

You do not have to enter anything at the **Description** field.

Under **Database Configuration Browse** and select your **Server**. This is the Server where your SYSPRO Databases is installed. Select your **Authentication method**.

Enter *thinklynqservice* at the **User ID** field and enter the password you wrote down earlier. The database has already been installed, so you **DO NOT** have to select **Create new database**. Using the dropdown arrow select **SysproCompanyMom**.

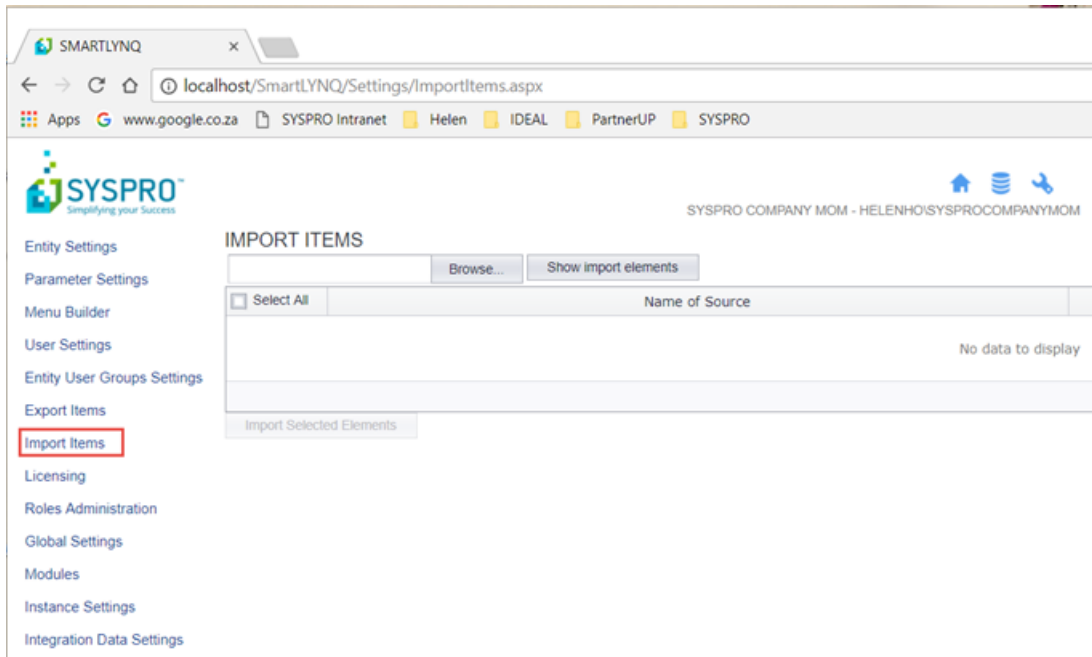
Select **Save**.



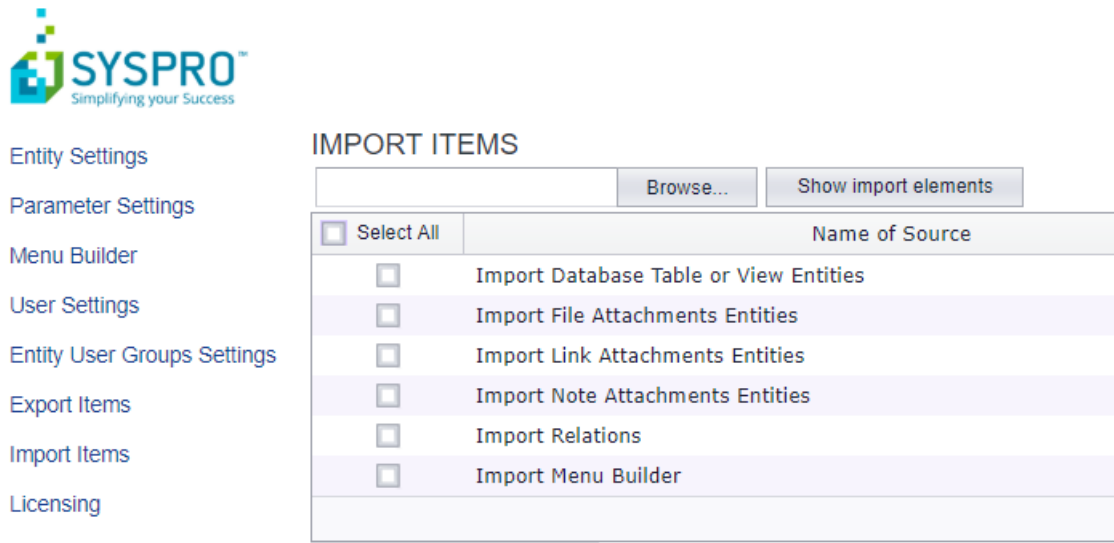
Note: As this is a first install, **SmartLYNQ** recognizes that there are no instances to be find in SmartLYNQ.

3. Select **Import Items** from the menu on the left hand side.

Import Items is displayed showing that no items have been imported.



4. Select **Browse** and navigate to the **C:\SYSPRO\LYNQ\SmartLYNQ\Profiles** folder and open **SmartLynq Profile for SYSPRO.xml** file. Select **Show import elements**. The **SmartLYNQ Import Items** information is displayed.



5. The items displayed are from the **SmartLynq Profile for SYSPRO.xml** profile. Select **Select All** and then **Import Selected Elements**. Look at the statements and check that scripts have completed.

2018/06/12 10:19:36. Import finished successfully.
 2018/06/12 10:19:36. Start import: Among entity SM File Attachment () and entity SM JobView (Add File to Customer).
 2018/06/12 10:19:36. Import finished successfully.
 2018/06/12 10:19:36. Start import: Among entity SM EmployeeView (Add File to Employee) and entity SM File Attachment ().
 2018/06/12 10:19:36. Import finished successfully.
 2018/06/12 10:19:36. Start import: Among entity SM EmployeeView (Add URL to Employee) and entity SM Link Attachment ().
 2018/06/12 10:19:36. Import finished successfully.
 2018/06/12 10:19:36. Start import: Among entity SM EmployeeView (Add Form to Employee) and entity SM Note Attachment ().
 2018/06/12 10:19:36. Import finished successfully.

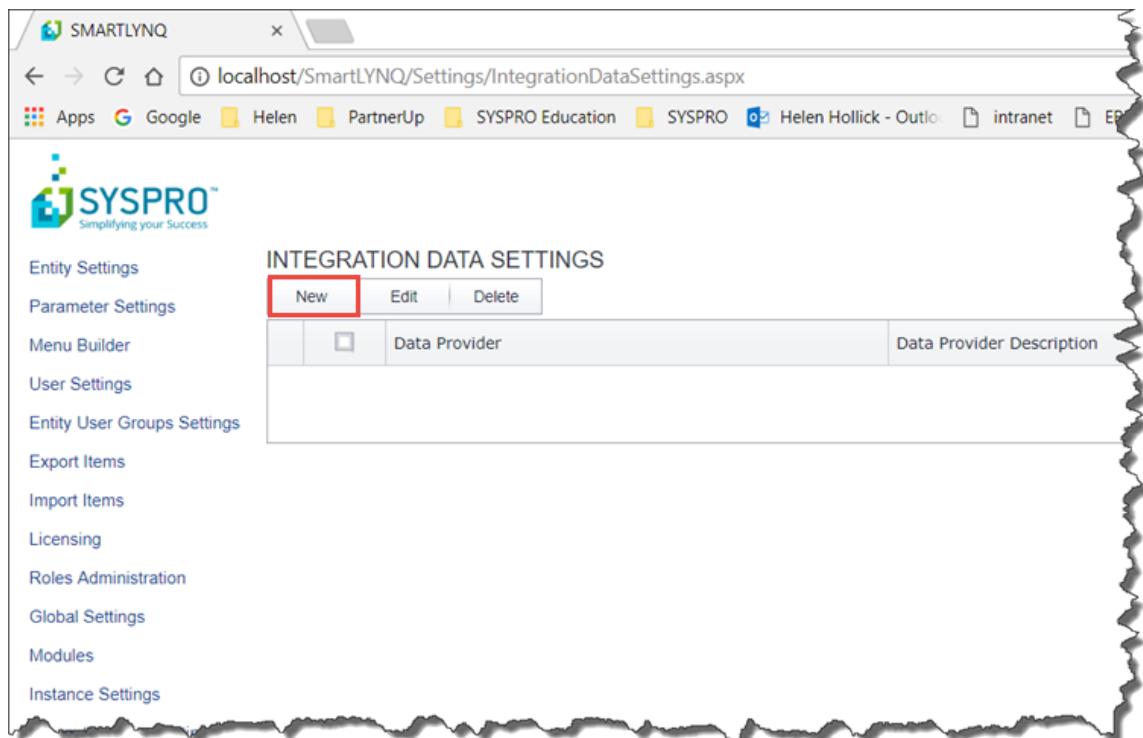
Import Menu Items

2018/06/12 10:19:36. Start import menu item "" to entity "SM CapturedBOMView" relation.
 2018/06/12 10:19:36. Start import menu item "" to entity "SM EmployeeView" relation.
 2018/06/12 10:19:36. Start import menu item "" to entity "SM FacilityView" relation.
 2018/06/12 10:19:36. Start import menu item "" to entity "SM JobView" relation.
 2018/06/12 10:19:36. Start import menu item "" to entity "SM OperationView" relation.
 2018/06/12 10:19:36. Start import menu item "" to entity "SM TaskView" relation.
 2018/06/12 10:19:36. All menu item to entity relation import "" finished.

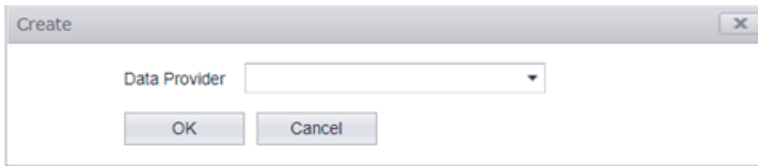
Note: If you have multiple companies or instances installed you can switch between them and the new company name and database will be displayed. The configuration per company is by instance.

- After importing the entries you now need to setup the integration.
 Select **Integration Data Settings** from the menu on the left hand side.

The **SmartLYNQ Integration Data Settings** information is displayed.



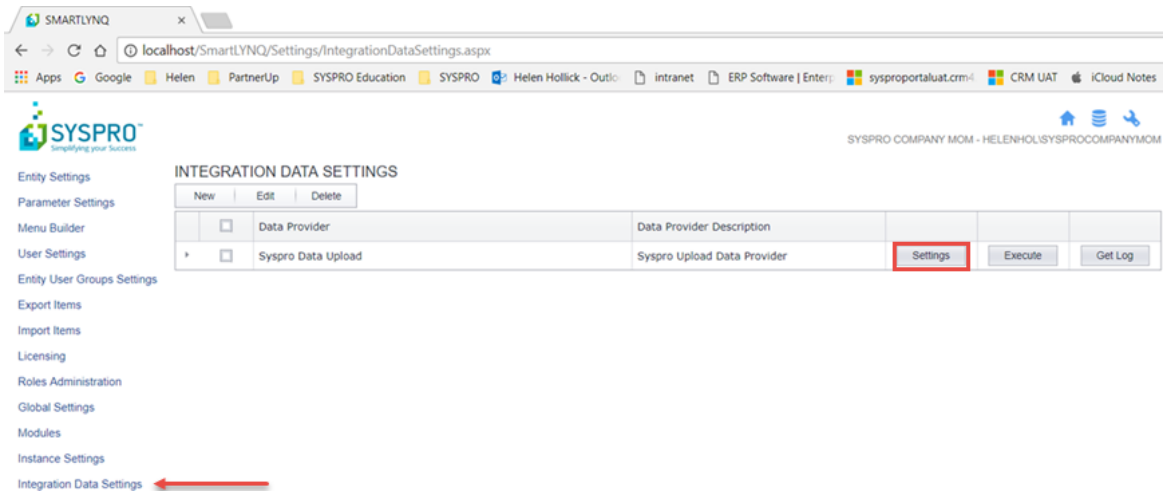
- Select **New**.
 The **Create** window is displayed.



8. Use the dropdown and select the **Data Provider** and then **OK**.

Select **Syspro Data Upload** and **OK**. This creates a new integration setting for SYSPRO.

The **SmartLYNQ Integration Data Settings** information is displayed.



9. Select **Settings**.

The **SYSPRO SETTINGS** window is displayed.



SYSPRO SETTINGS

Service Settings		Transaction Types to Process	
WCF Service Address (URL)	<input type="text"/>	Labor Time	<input checked="" type="checkbox"/>
WCF Service Binding	<input type="text"/>	Indirect Time	<input type="checkbox"/>
Operator Code	ADMIN	Completion Quantity	<input checked="" type="checkbox"/>
Operator Password	<input type="text"/>	Completion Scrap	<input checked="" type="checkbox"/>
Company Code	MOM	Operation Completion Status	<input checked="" type="checkbox"/>
Company Password	<input type="text"/>	Material Issue	<input checked="" type="checkbox"/>
Encore Instance	<input type="text"/>	Job Receipts	<input checked="" type="checkbox"/>
Language Code	<input type="text"/>		
Log Level	<input type="text"/>		
XML Parameters	<logon><product>LynqTracker</product></log		
Test Connection	<input type="button" value="Run"/>		

Completion Scrap Settings		General	
Reason Code for Blank Values	<input type="checkbox"/>	Non stock product class	<input type="text"/>
Process Scrap as Finished Good	<input type="checkbox"/>	Default UOM	Stocking
Default Target Scrap Warehouse	<input type="text"/>	Decimals count	2
		Cut Off Interval	<input checked="" type="checkbox"/> 30

Job Receipt Settings	
Inspect Lot Traceability Items	<input type="checkbox"/>
Cost Basis	None
Increase Sales Order Quantity	<input type="checkbox"/>
Lot Traceability Processing	Set Lot Traceability Number to equal Job Nu
Serial Number Processing	Use Serial Number specified in Transaction

10. Enter the required **Service Settings**.



SYSPRO SETTINGS

Service Settings	
WCF Service Address (URL)	<input type="text"/>
WCF Service Binding	Rest HTTP
Operator Code	<input type="text"/>
Operator Password	<input type="text"/>
Company Code	<input type="text"/>
Company Password	<input type="text"/>
Encore Instance	<input type="text"/>
Language Code	<input type="text"/>
Log Level	<input type="text"/>
XML Parameters	<logon><product>LynqTracker</product></log
Test Connection	<input type="button" value="Run"/>

Enter the WCF Service Address and Service Binding.

Enter *net.tcp://localhost:31001/SYSPROWCFService/* at the WCF Service Address (URL) field. Enter *NET.TCP* at the **WCF Service Binding** field. These settings may differ depending on IIS settings.

Enter *ADMIN* at the **Operator Code** field.

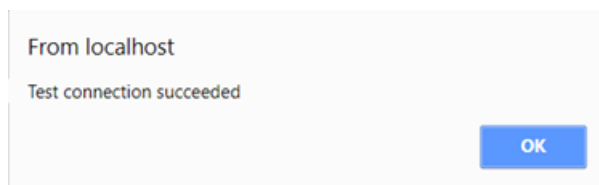
Enter *MOM* at the **Company Code** field.

Select *Run* to test the connection.

If the **Test Connection** succeeded select **OK**.


 **Note:** The **Service Settings** defines the entire integration with **Work in Progress**.

If the test is completed successfully you will see the **Localhost says Test connection succeeded** window.



11. Select the **Transaction Types to Process**.

For our purposes select all the **Transaction Types to Process**.

 **Note:** Transaction types refer to Work in Progress transactions.



12. Scroll down until you see the **Manufacturing Operations Management Settings**.

MANUFACTURING OPERATIONS MANAGEMENT SETTINGS

Connection Settings

Server	<input type="text"/>	<input type="button" value="Refresh"/>
Authentication	SQL Server Authentication	
User ID	<input type="text"/>	
Password	<input type="text"/>	
Database	<input type="text"/>	

Post Transactions

Is Active	<input type="checkbox"/>
Interval	<input type="text" value="1:00"/>
Logs Saving Time (Days)	<input type="text" value="10"/>

13. Enter the required **Connections Strings**.

Using the drop down select your server name at the **Server** field e.g. (local).

Leave the **Authentication** method as **SQL Server Authentication**.

Enter *thinklynqservice* at the **User ID** field and the password you wrote down earlier in the **Password** field.

Browse and select the **MOM_MOM_Data** database. The three character in the middle is the **SYSPRO Company ID**.

14. Enter how often the system needs to post transactions.

Select **Is Active** to enable the posting of transactions.

Change the default **Interval** from 1:00 hour to 1 minute.

Select **30** for the **Logs Saving Time (Days)**.

Select **Save**.

The **Integration Data Settings** information is displayed.

SMARTLYNQ

localhost/SmartLYNQ/Settings/IntegrationDataSettings.aspx

SYSPRO

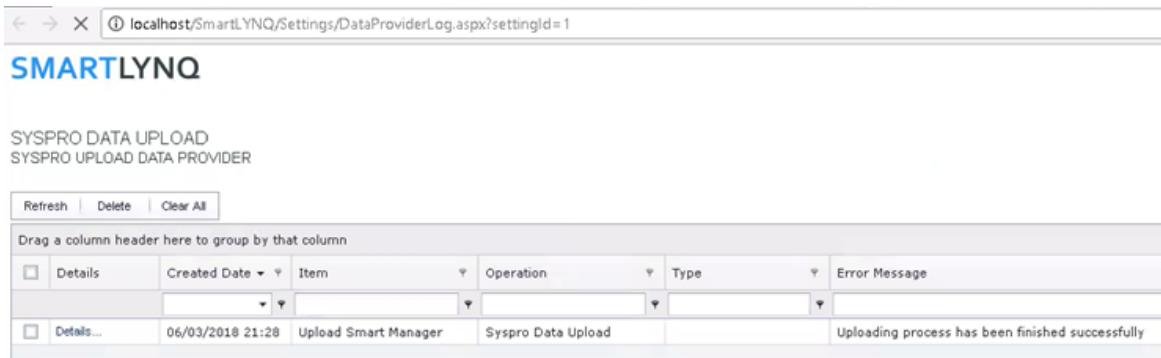
INTEGRATION DATA SETTINGS

	Data Provider	Data Provider Description			
<input type="checkbox"/>	Data Provider				
<input checked="" type="checkbox"/>	Syspro Data Upload	Syspro Upload Data Provider	Settings	Execute	Get Log

Entity Settings
Parameter Settings
Menu Builder
User Settings
Entity User Groups Settings
Export Items
Import Items
Licensing
Roles Administration
Global Settings
Modules
Instance Settings
Integration Data Settings

15. Select **Execute** and then **Get Log** to see if the integration has successfully managed to communicate with **SYSPRO**.


The **Syspro Data Settings** Log information is displayed.



The screenshot shows a web browser window with the URL `localhost/SmartLYNQ/Settings/DataProviderLog.aspx?settingId=1`. The page title is "SMARTLYNQ". Below the title, it says "SYSPRO DATA UPLOAD" and "SYSPRO UPLOAD DATA PROVIDER". There are three buttons: "Refresh", "Delete", and "Clear All". Below these buttons is a table with the following columns: "Details", "Created Date", "Item", "Operation", "Type", and "Error Message". The table contains one row of data:

Details	Created Date	Item	Operation	Type	Error Message
Details...	06/03/2018 21:28	Upload Smart Manager	Syspro Data Upload		Uploading process has been finished successfully

16. **SmartLYNQ** is now successfully installed and connected to the **WCF Service**.

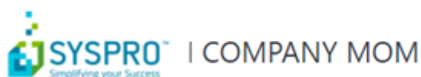
 **Note:** When the interval time has passed. **SmartLYNQ** will schedule itself to post any **Work in Progress** entries, where the transaction has been approved for posting. This application isn't used by the typically user but there would be a system administrator that needs to take responsibility for this

Mapping MOM to SmartLYNQ

The following steps describe how to map MOM back to SmartLYNQ.

1. Open the **MOM Web Site**.

Enter `localhost/MOM_MOM/` into the URL address line.



2. Select **Settings** from the top right hand corner.

The **Settings** window is displayed.

Settings

SAVE RESTART

General Settings Company Name Add ERP database name Localization Language Administrator(s) Admin e-mail	COMPANY MOM <input type="checkbox"/> English (United States) English US <input type="button" value="Edit"/> <input type="button" value="Import"/> Helen.Hollick example@example.com	Email Settings Address From Alias Server Port Account Password Enable SSL	example@ example@ example@ SMTP Ser SMTP Ser Email Use Email Acc <input type="checkbox"/>
--	---	--	--

* test message will be sent


Database Settings Source Data Config Logic	SYSPRO with Planning Manager Please select Please select Please select	Server (local) (local) (local) (local)	Database SysproCompa MOM_MOM_ MOM_MOM_ MOM_MOM_
---	---	---	--

Integration Settings

Host:

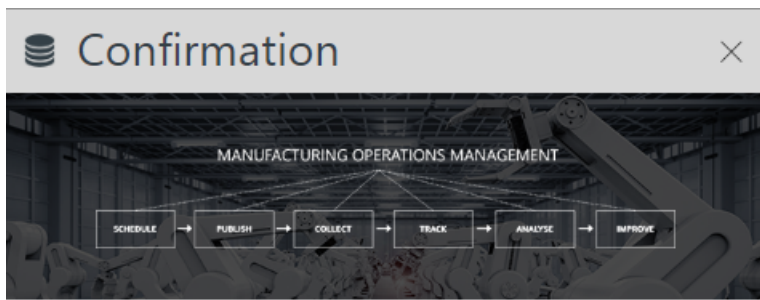
Service:

Instance:

 **Note:** Under **Integration Settings** the software will automatically populate the **SmartLYNQ** site. It creates a separate Web Site that is called the **SmartLYNQ Services** site.

3. Select **Test** and then browse and select the **Instance** and then **Save**.
Browse and select **Syspro Company MOM** at the **Instance** field. Select **Save**.


The **Confirmation** window is displayed.



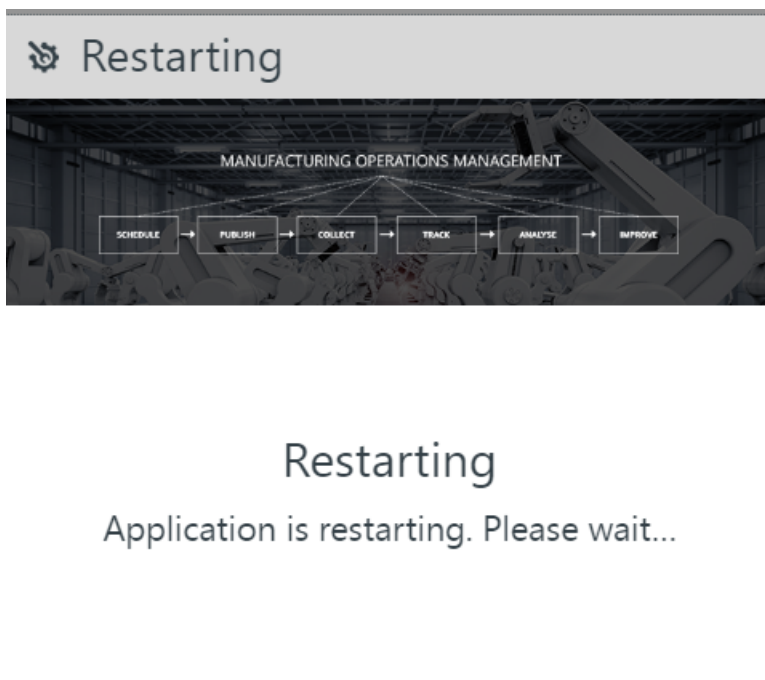
Changes in this screen will require restart of the application. Please confirm...



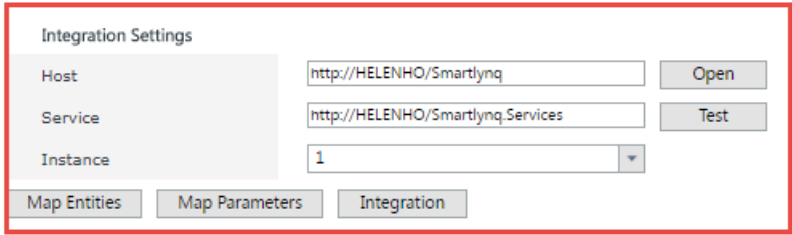
4. Select **OK**.

 **Note:** MOM needs to be restarted because you have amended the core setup of the application.


The **MOM Restarting** window is displayed.



Notice that the Instance has changed to 1 as shown below.



The image shows a screenshot of a web application interface titled "Integration Settings". It is enclosed in a red rectangular border. The form contains three input fields: "Host" with the value "http://HELENHO/Smartyhq" and an "Open" button; "Service" with the value "http://HELENHO/Smartyhq.Services" and a "Test" button; and "Instance" with the value "1" and a dropdown arrow. Below these fields are three buttons: "Map Entities", "Map Parameters", and "Integration".

 **Note:** When you install more than one MOM company each one will have a different instance number.

Product Updater

Updating Manufacturing Operations Management Suite

The following steps describe how to update the MOM software.

i Please ensure that you update the components in the following order:

- Visual APS
- Manufacturing Operations Management (Smart Manager)
- SmartLYNQ

Note:

The version number of each component will change as updates are released.

Navigate to the folder where you unzipped the manual files for the MOM install.

1. Run the **Product Updater** with **Administrator** rights.

The **Product Updater** window is displayed.




2. Enter your **License Name** and scroll down to the bottom of the **License Agreement** to accept the terms and conditions and select **Next** to continue.

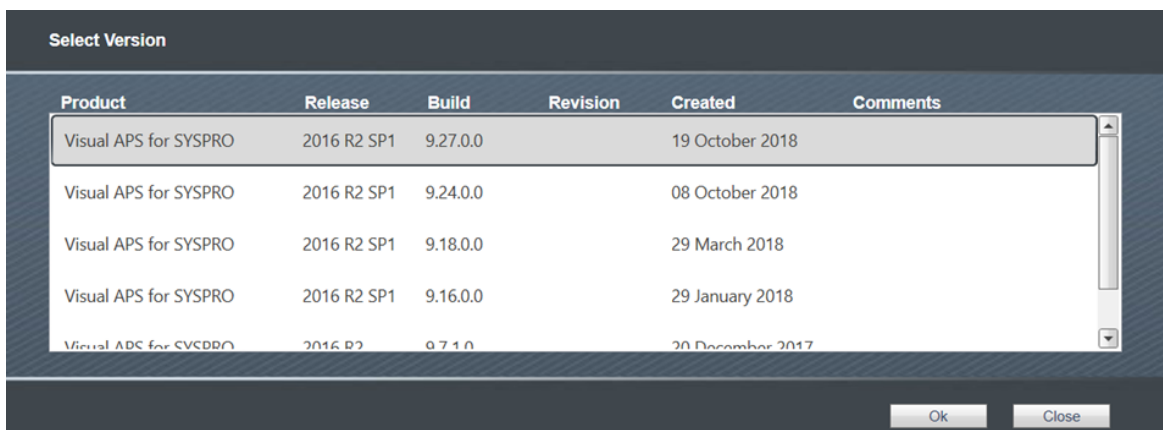
Note: If the version of the **Product Updater** is out of date you will be prompted to download a later version.

The **Product Updater** window is displayed showing the features that need to be updated.

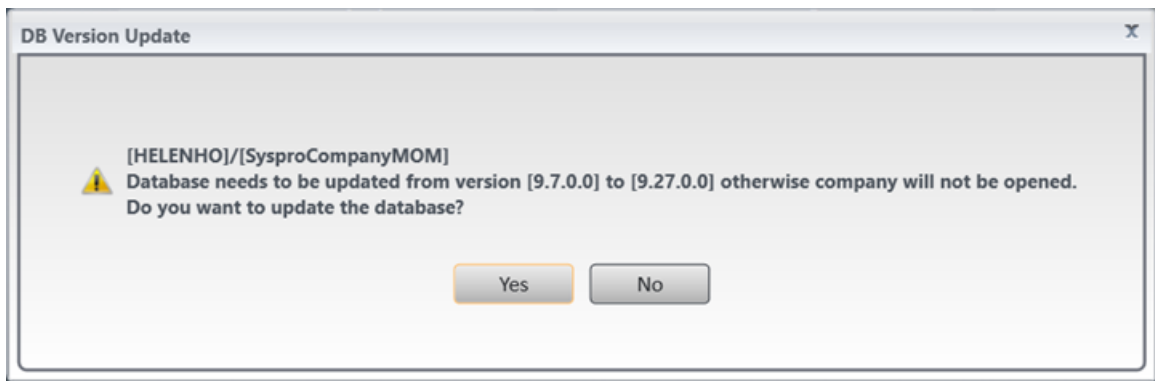


 **Note:** You need to update the software in the order it was installed i.e. Visual APS, then MOM (Smart Manager) and SmartLYNQ.

3. Select to update **Visual APS for SYSPRO..**
The **Select Version** window is displayed.

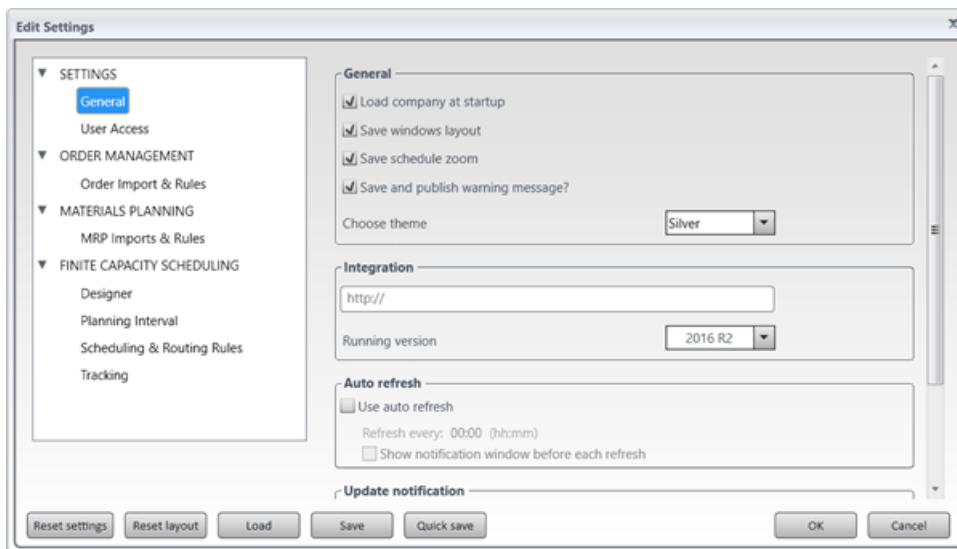


4. Highlight the latest version and select **Ok**.
The **DB Version Update** window is displayed.



5. Select **Yes**. The **Visual APS Planning Manager** window is displayed.
6. Select **File > Company**.

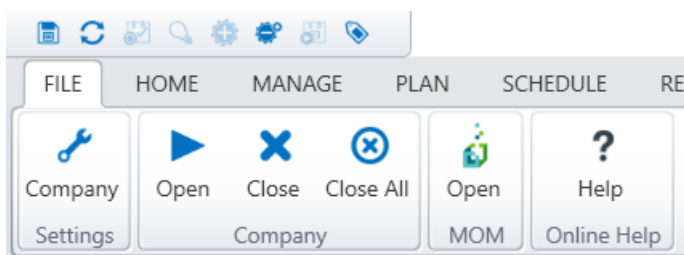
The **Edit Settings** window is displayed.



7. Enter the URL for the integration of Visual APS to MOM and select the Correct Running version.

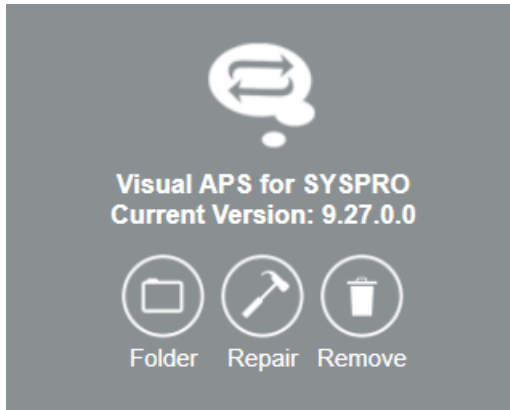
Enter **http://localhost/MOM_MOM/** in the Integration field and select the latest Running version.
Select **OK**.

The **Visual APS** home page is displayed.

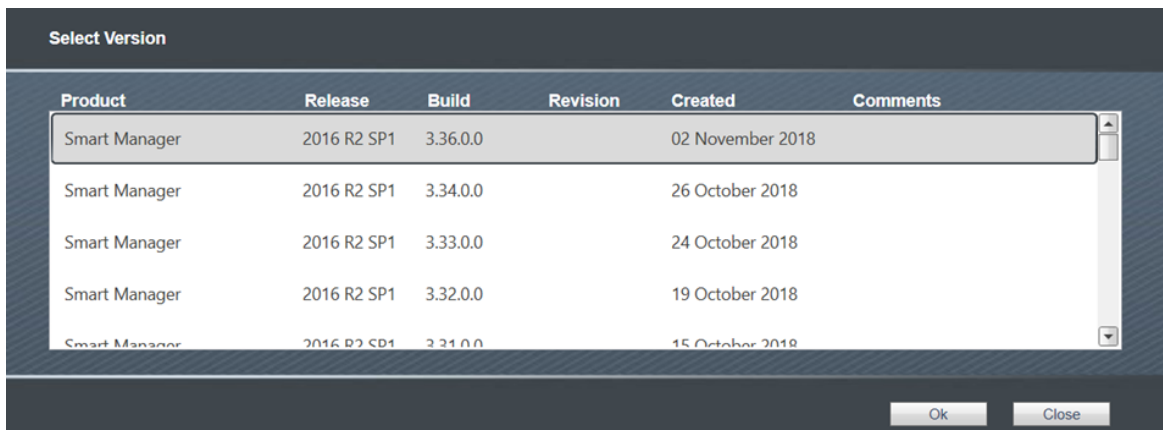


8. Select **Open MOM**. This will launch the MOM home page. Close the site.
9. Return to the **Product Updater** and note that Visual APS has been updated to the latest version.

The **Product Updater** shows that *Visual APS for SYSPRO* is on the latest version.

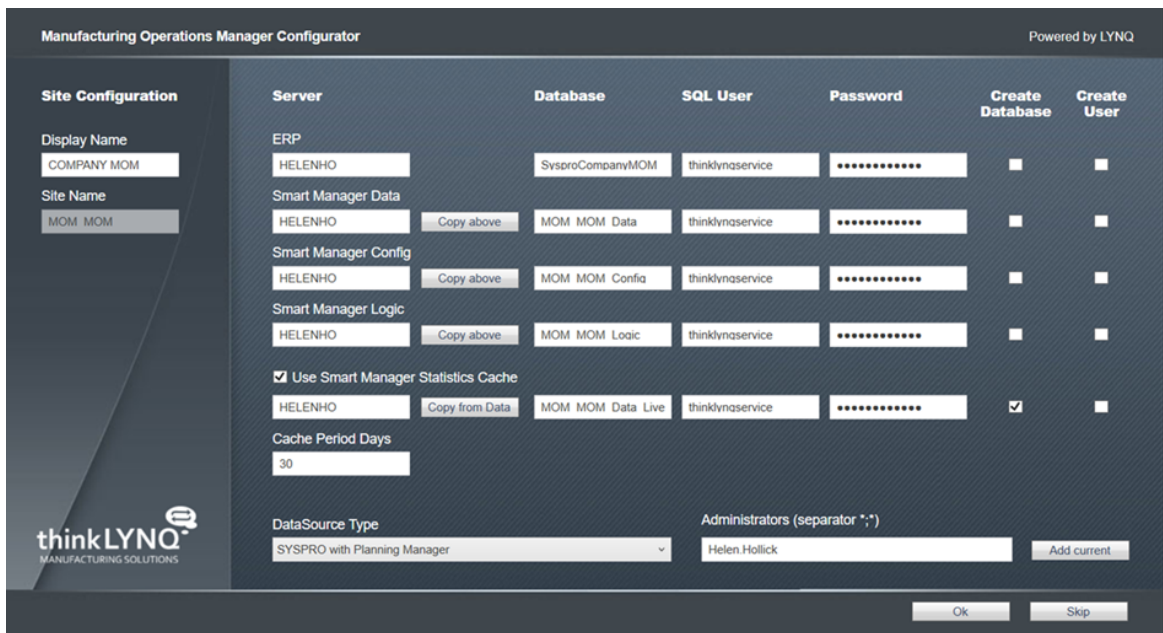


10. From the **Product Updater** window select to update **SmartManager**.



11. Highlight the latest version and select **Ok**.

The **Manufacturing Operations Manager Configurator** window is displayed.

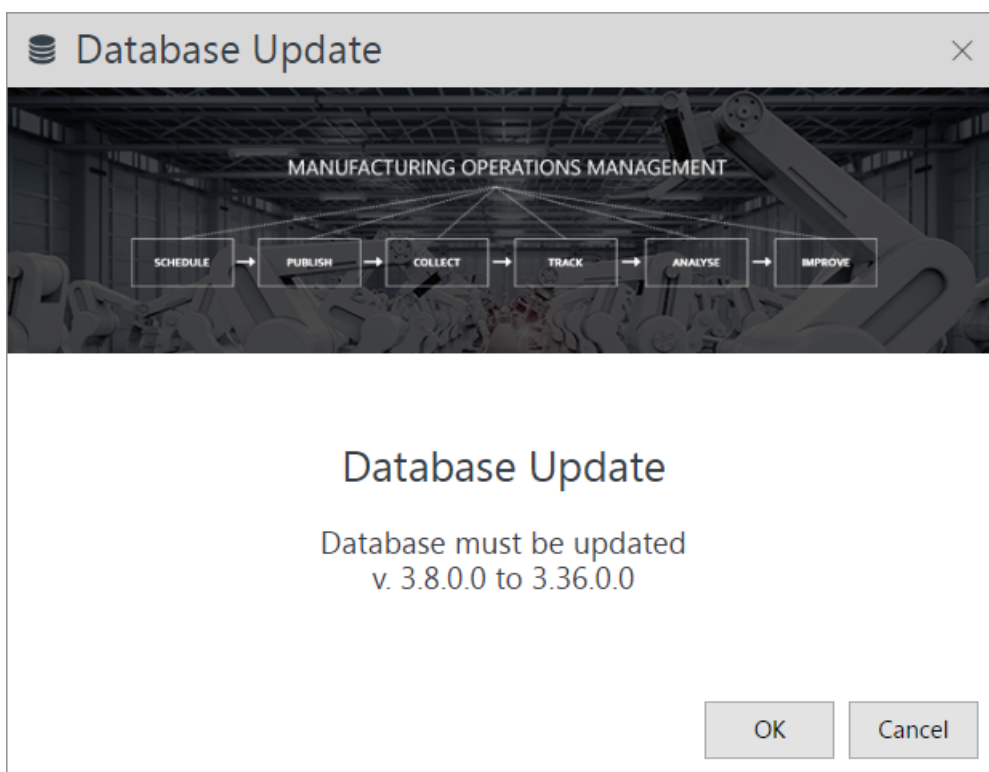


12. Check the **Configuration** and select **Ok**.

The **Databases** and **Users** have already been created. The **DataSource Type** is **SYSPRO with Planning Manager** and you need to ensure that your **Administrator(s)** has/have been entered correctly. Select **Ok** to continue.

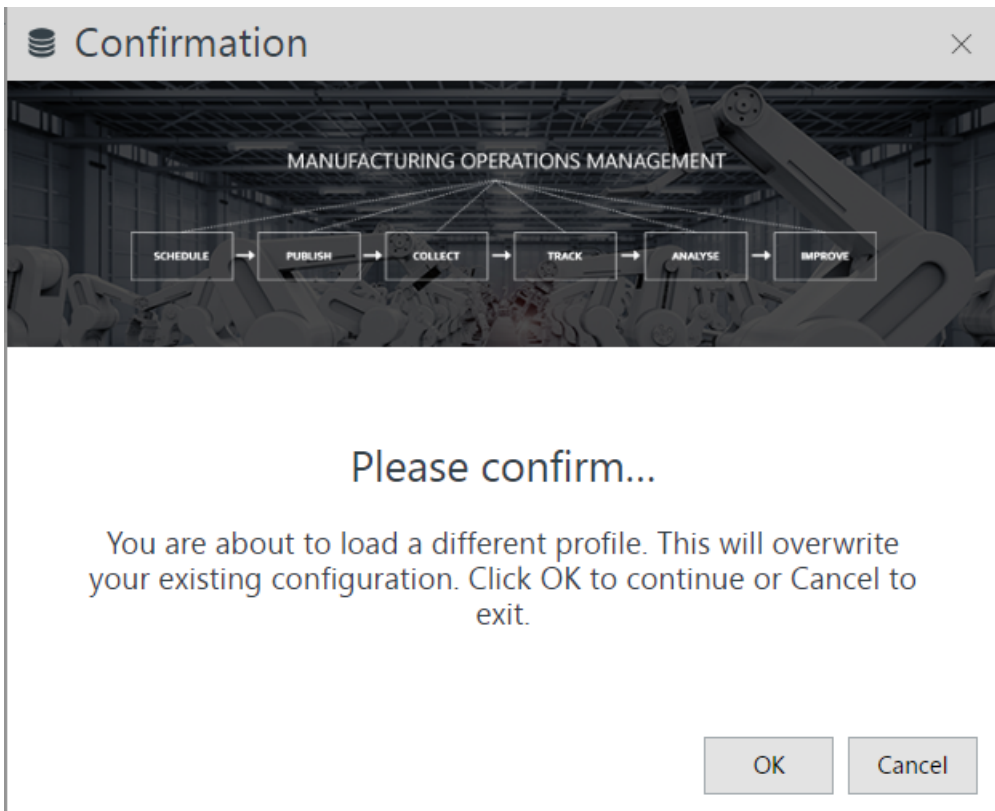
13. Load the **MOM URL** (http://localhost/MOM_MOM/).

The **Database Update** window is displayed.



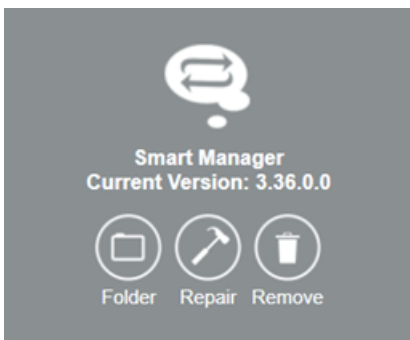
14. Select **OK**.

The **Confirmation** window is displayed:



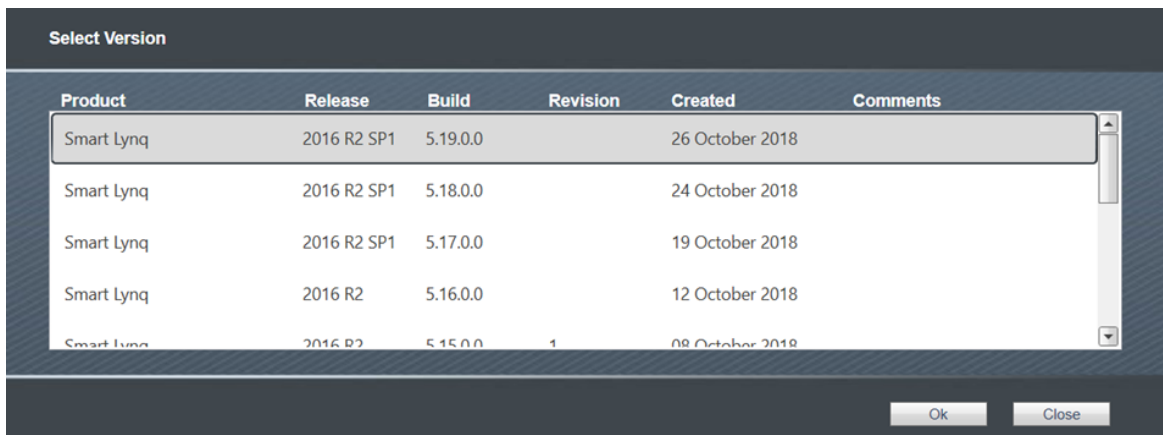
15. Exit **MOM** and return to the **Product Updater**.

The **Smart Manager Version** shows that the product is on the latest version.



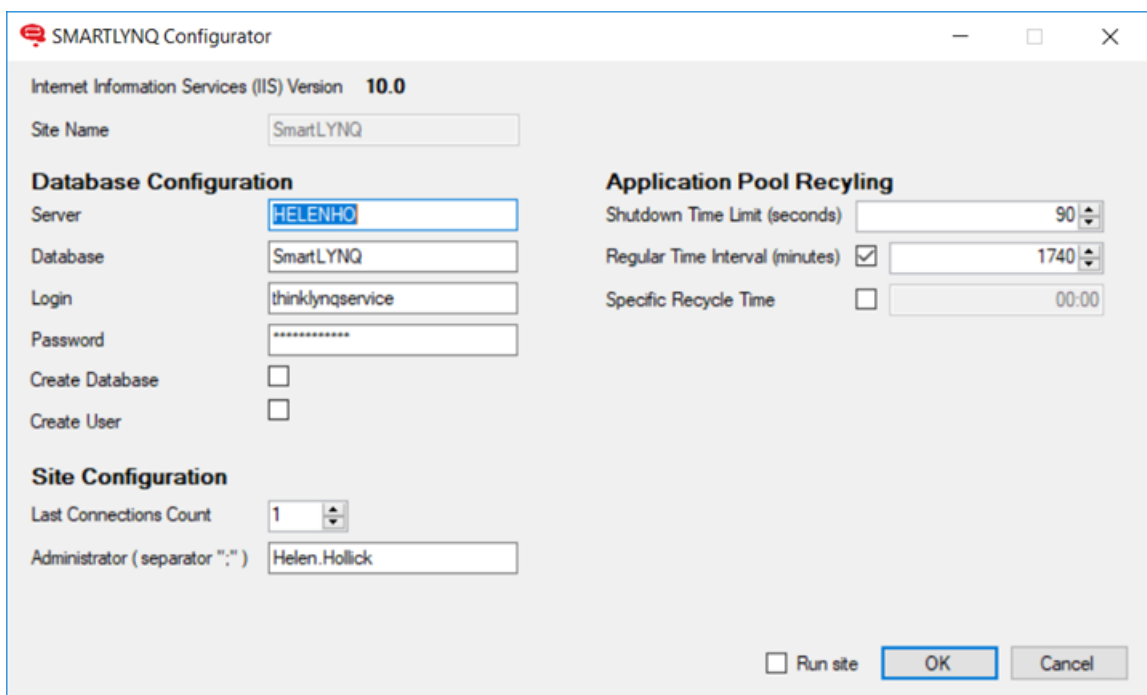
16. Select to update **SmartLYNQ**.

The **Select Version for SmartLYNQ** window is displayed.



17. Highlight the latest version and select **Ok**.

The **SmartLYNQ Configurator** window is displayed.



18. You will be asked for connection information. Select **Run site** and **OK**.

Enter or select the correct details and select **Ok**. The Create Database and Create User options have already been configured therefore you do not need to select these options.

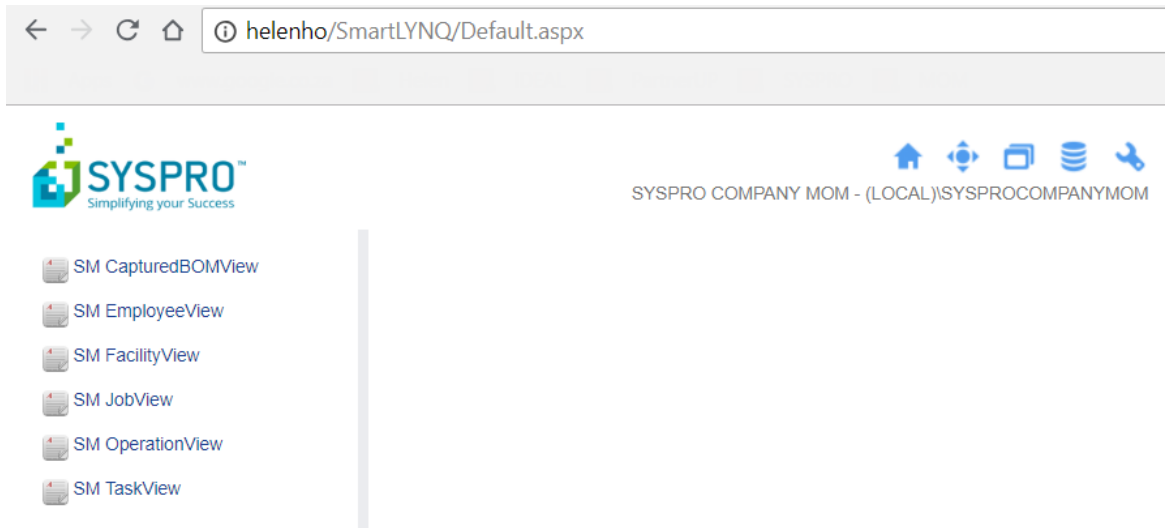
SmartLYNQ Website opens in a window and you are requested to update the database.

Database needs to be updated from version [5.4.0.0] to [5.19.0.0], additional SQL tables will be created.
Do you want to update the database? If not application will be stoped.

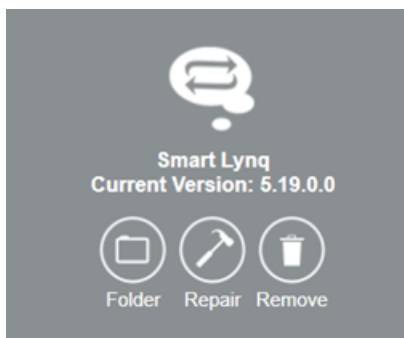
Update

19. Select **Update**.

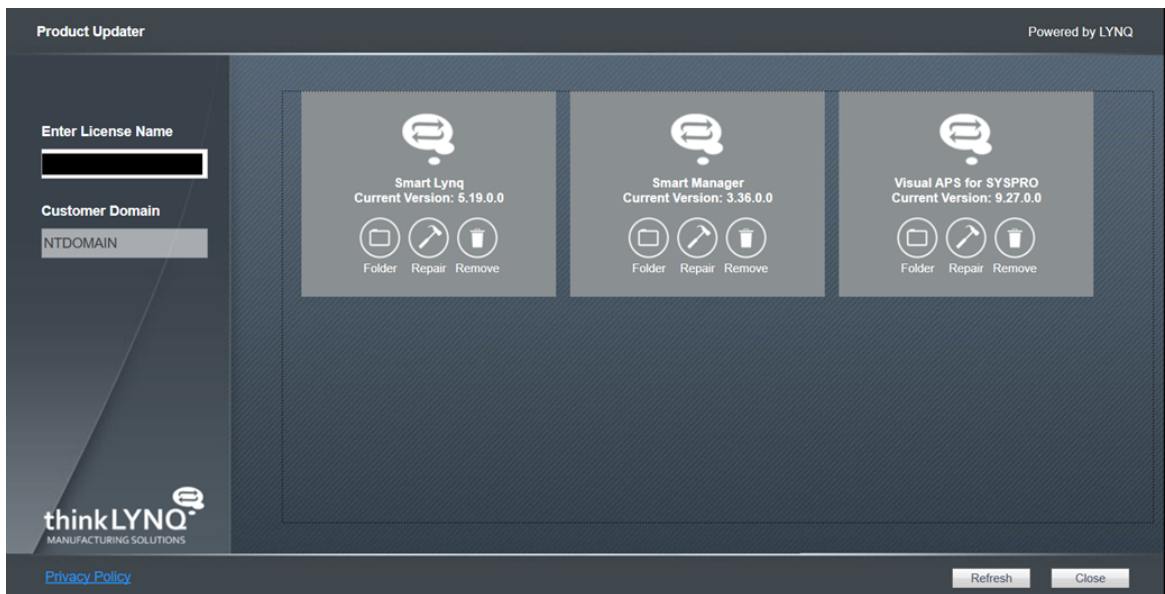
The SmartLYNQ Website shows the updated database.



From the **Product Updater** the *SmartLYNQ Version* shows that the product is on the latest version.



The **Product Updater** window is displayed showing that all products have been updated.



20. Select **Close**.

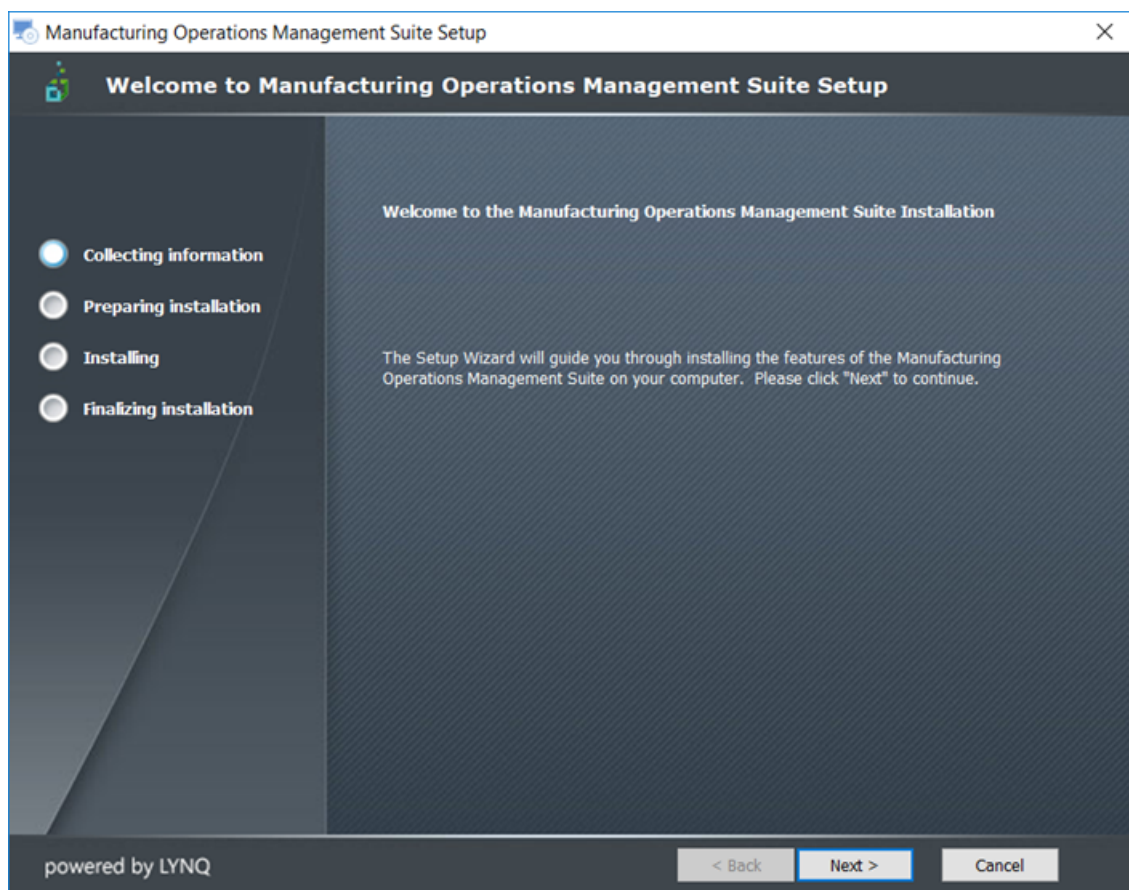
Adding another Instance of MOM

Installing another instance of Manufacturing Operations Management

The following steps describe how to Install another instance of Manufacturing Operations Management.

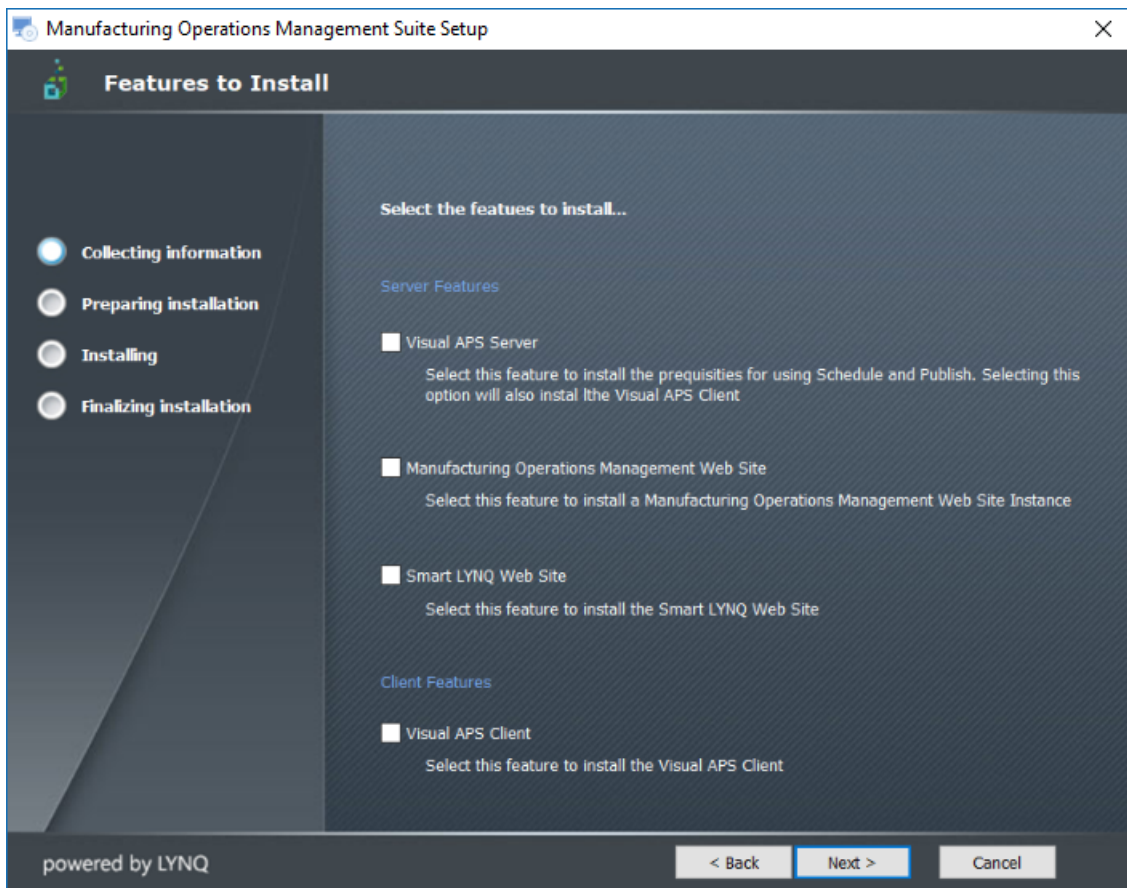
1. Logon as the administrator to the server where you have chosen to install the web site features of **Manufacturing Operations Management**.
2. Run the file name **Manufacturing Operations Management Suite.exe** to start the installation wizard.

The **Welcome to Manufacturing Operations Management Suite Setup** window is displayed.



3. Select **Next >**.

The **Features to Install** window is displayed.

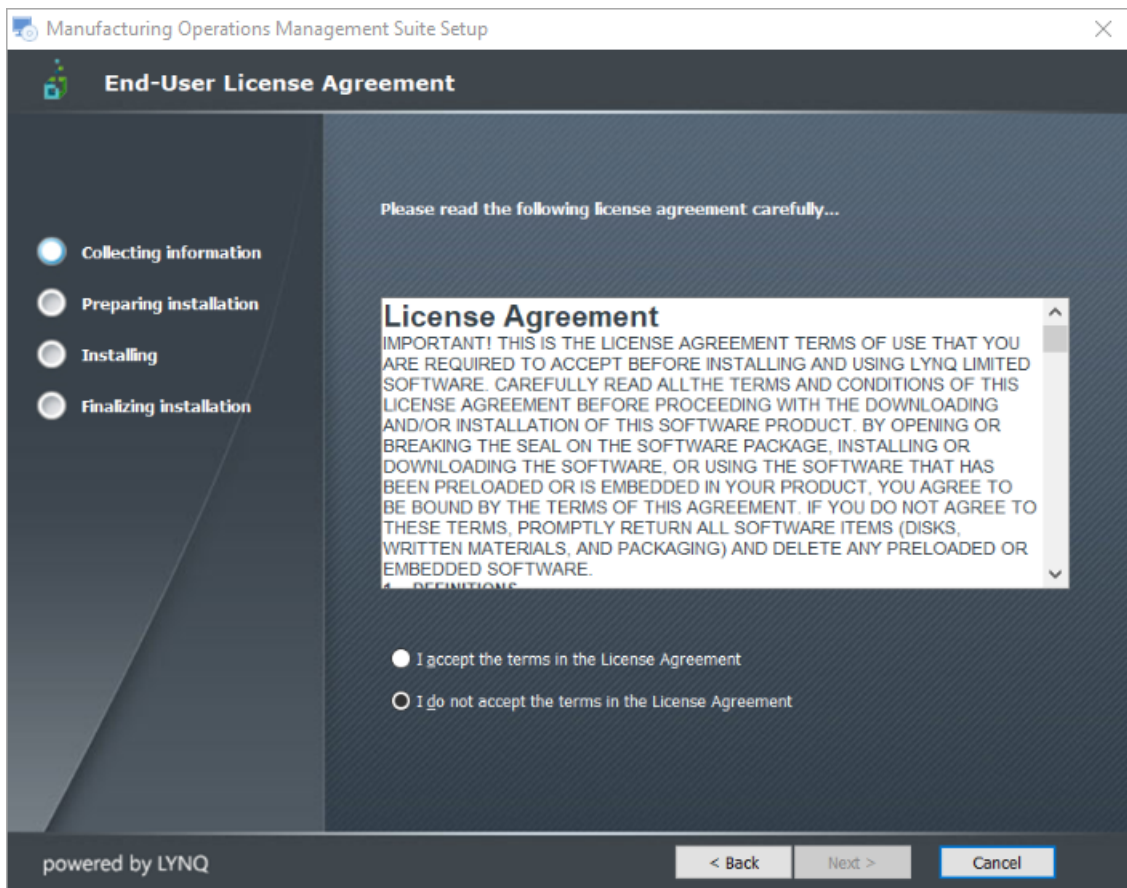


4. Select the feature(s) to be install based on the components you are licensed for and select **Next >**.

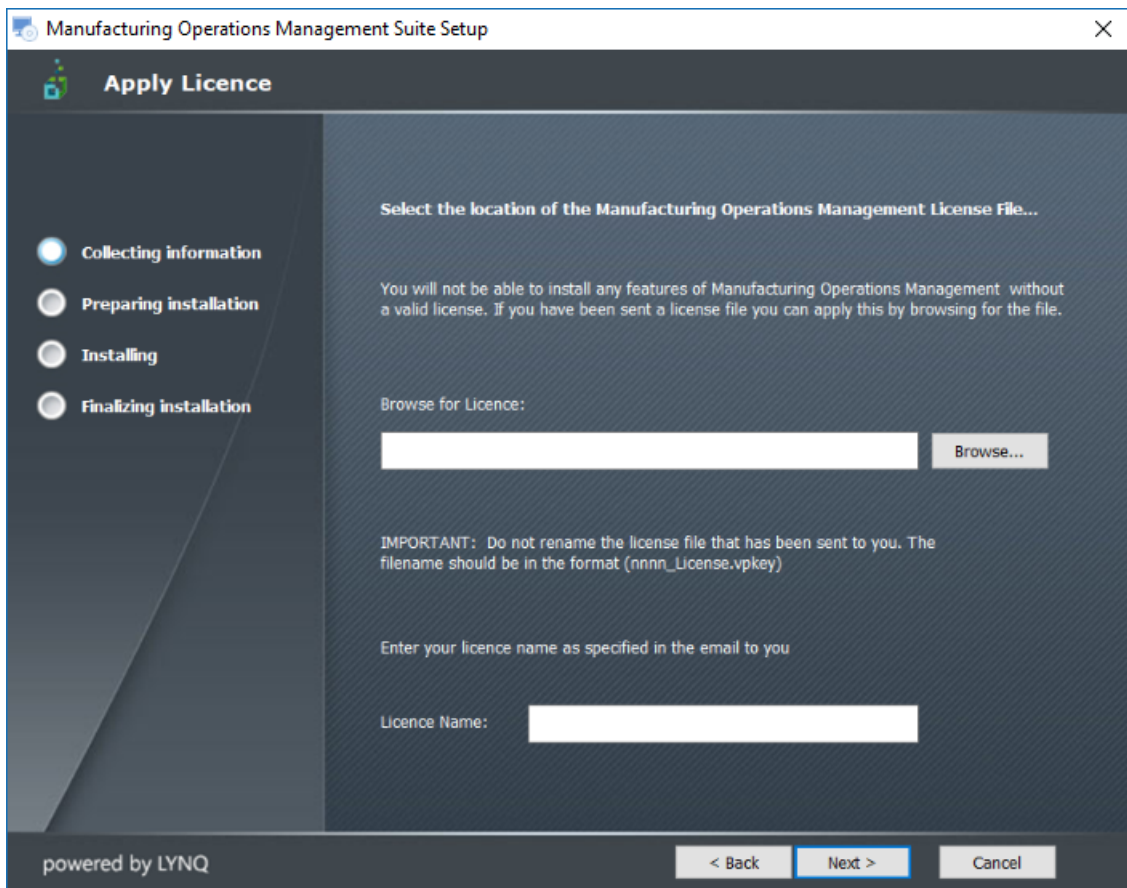
For our purposes, select **Server Features: Manufacturing Operations Management Web Site**.

Select **Next >** to continue.

The **End-User License Agreement** window is displayed.



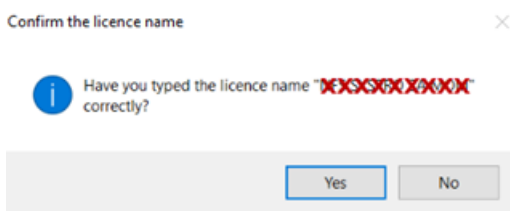
5. Select **I accept the terms in the License Agreement** and then **Next >**. The **Apply License** window is displayed.



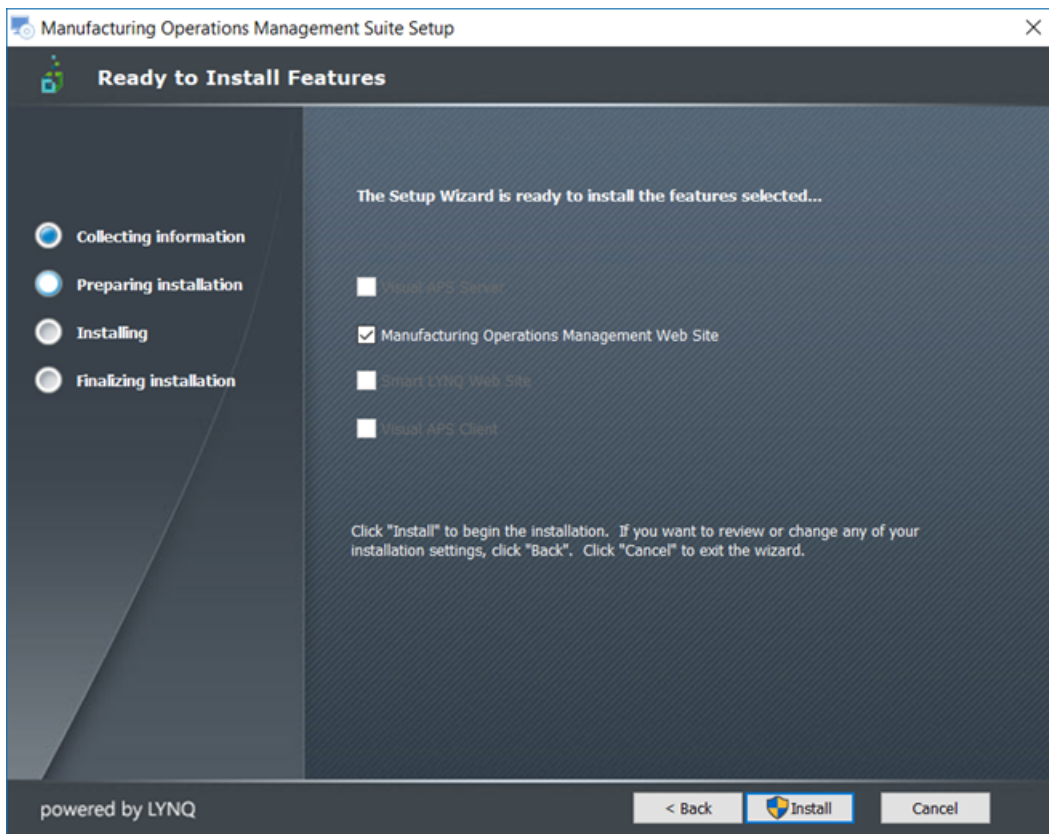
6. Browse and select the license file sent to you by **SYSPRO**. Do **NOT** rename the license file. Enter your license name as sent to you by **SYSPRO** and select **Next >** to continue.

 **Note:** The license Name is not case sensitive.

The **Confirm the License name** Window is displayed.

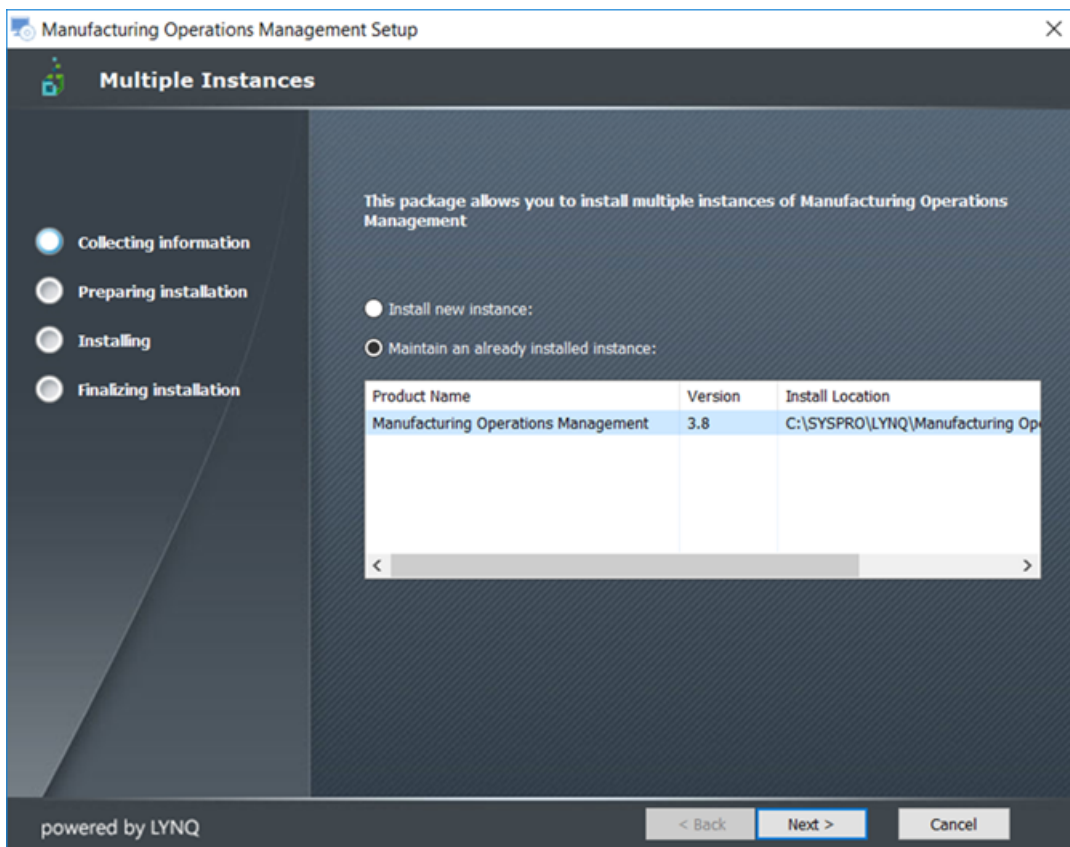


7. Confirm the license name entered and select **Yes**.
The **Ready to Install Features** window is displayed.



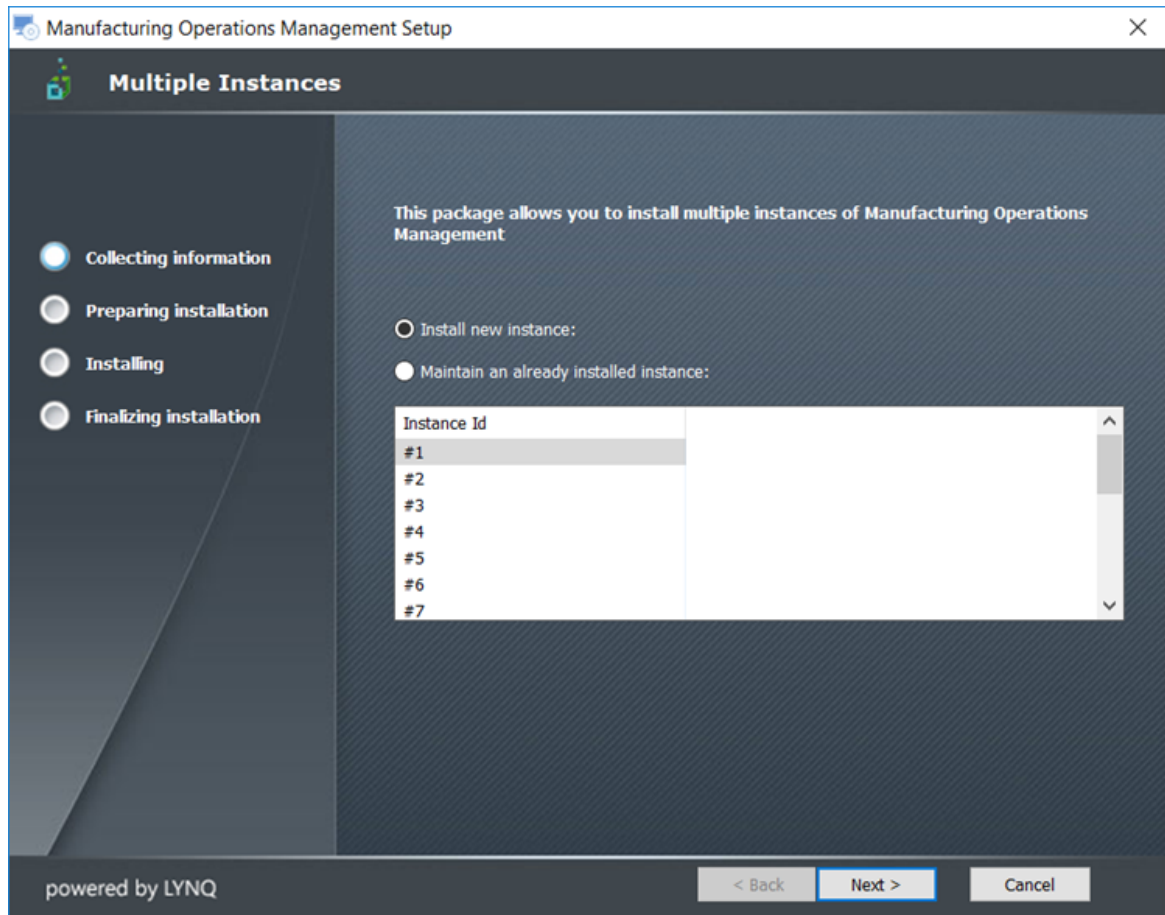
8. Select **Install**.

The *Welcome to Manufacturing Management Setup* window is displayed.



9. Select **Install new instance**.

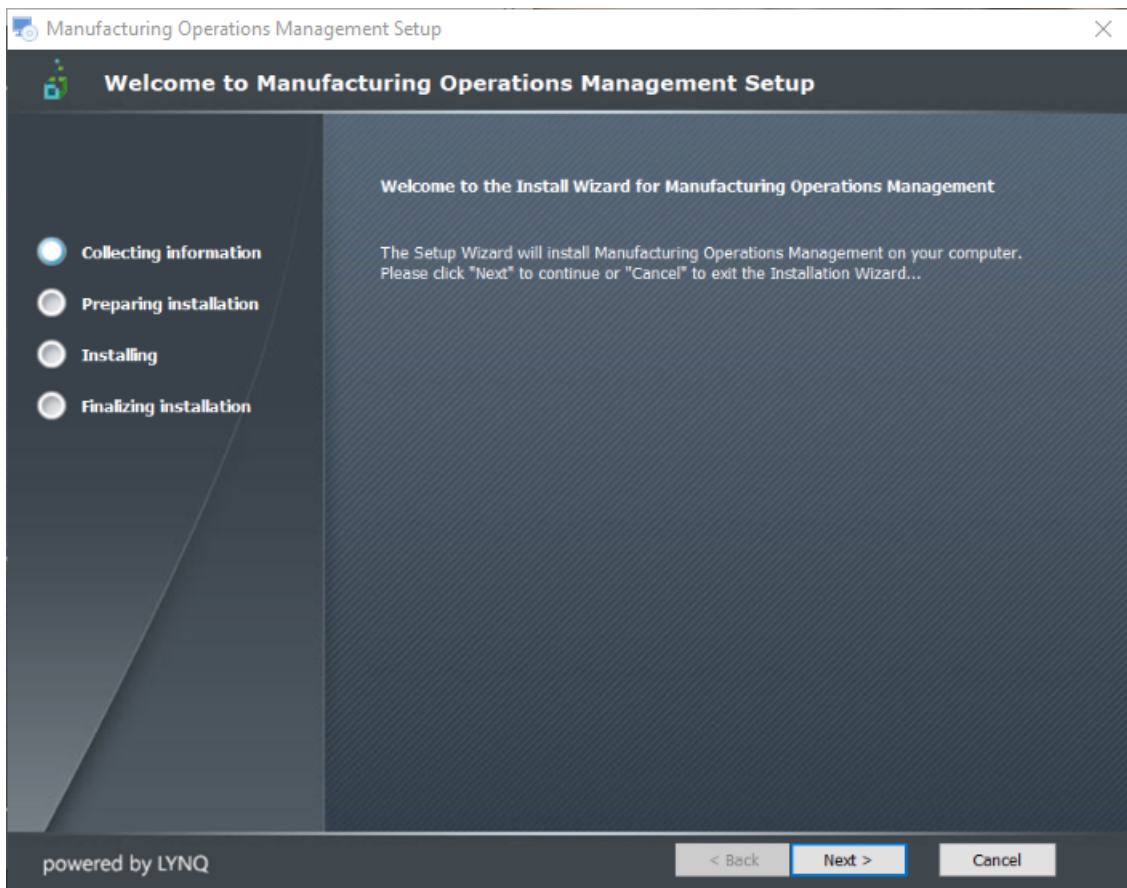
The **Multiple Instances** window is displayed.



10. Select the instance Id.

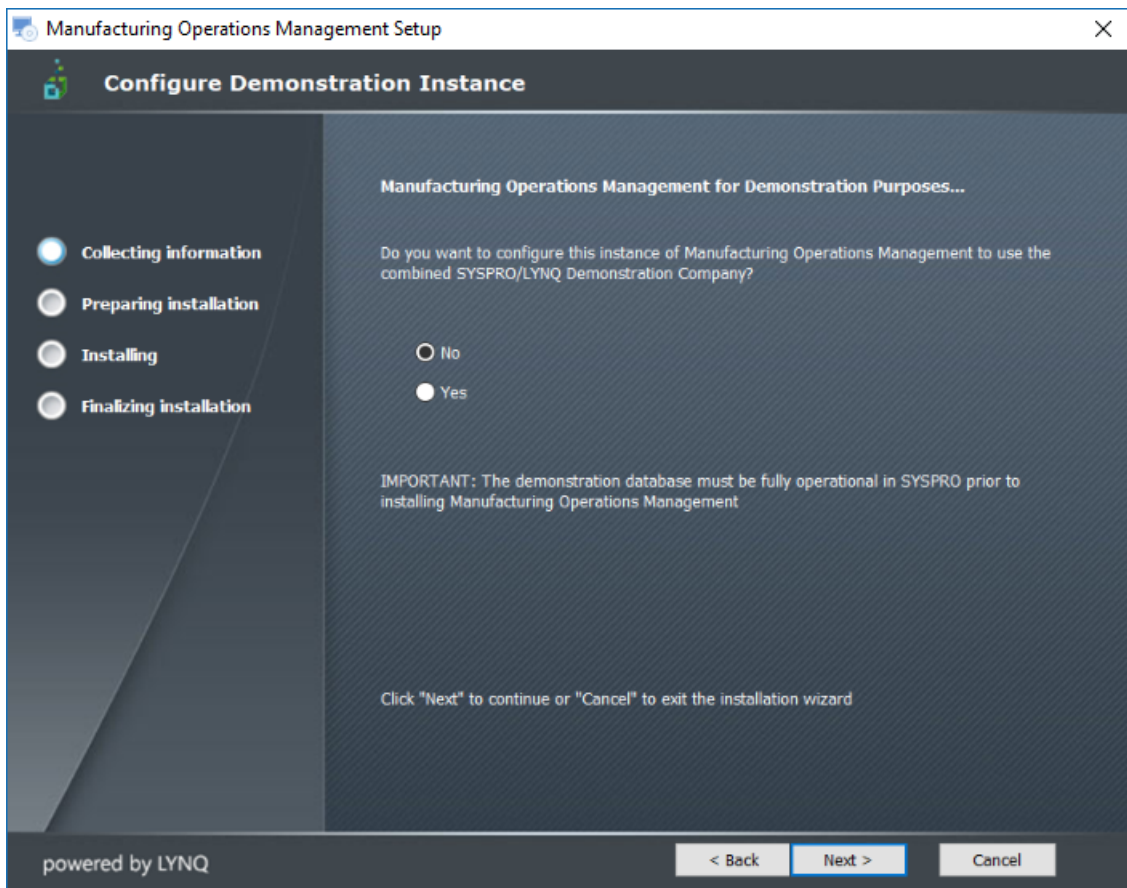
Select #1.

The **Welcome to Manufacturing Management Setup** window is displayed.



11. Select **Next >** to continue.

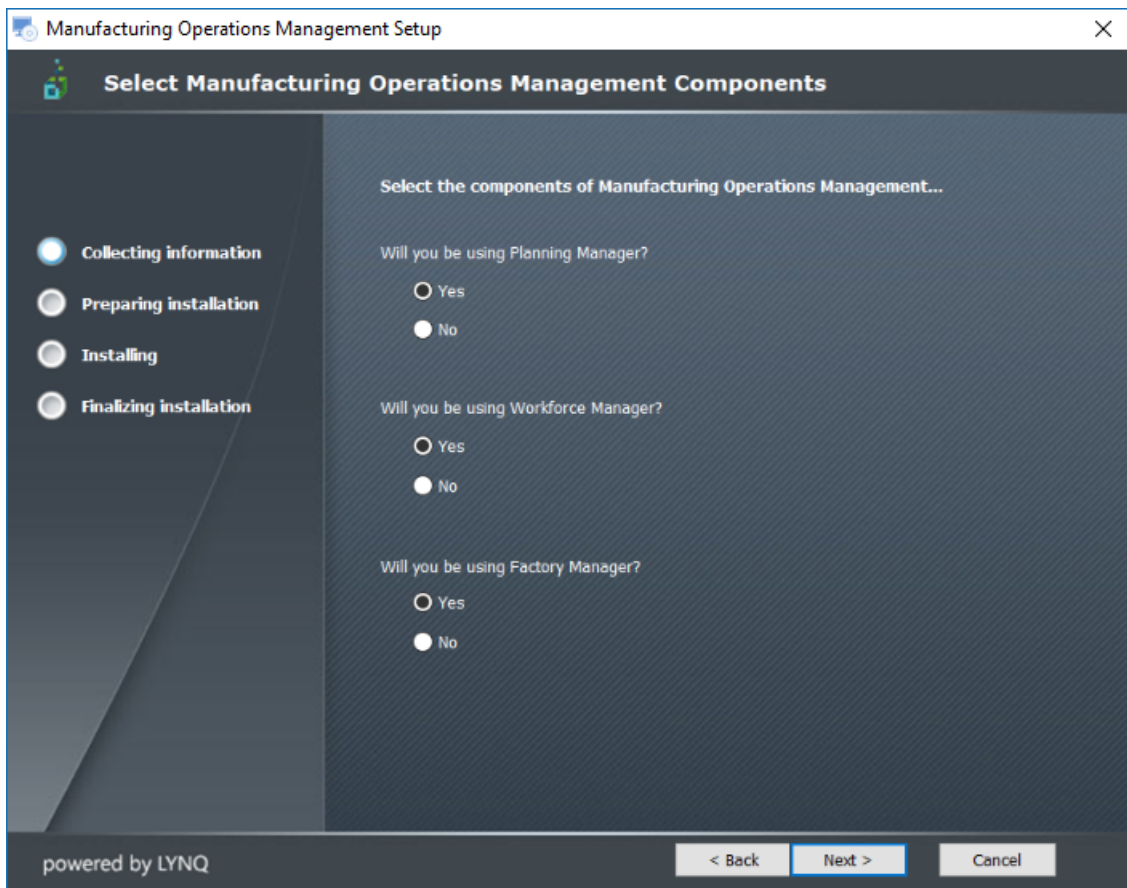
The ***Configure Demonstration Instance*** window is displayed.



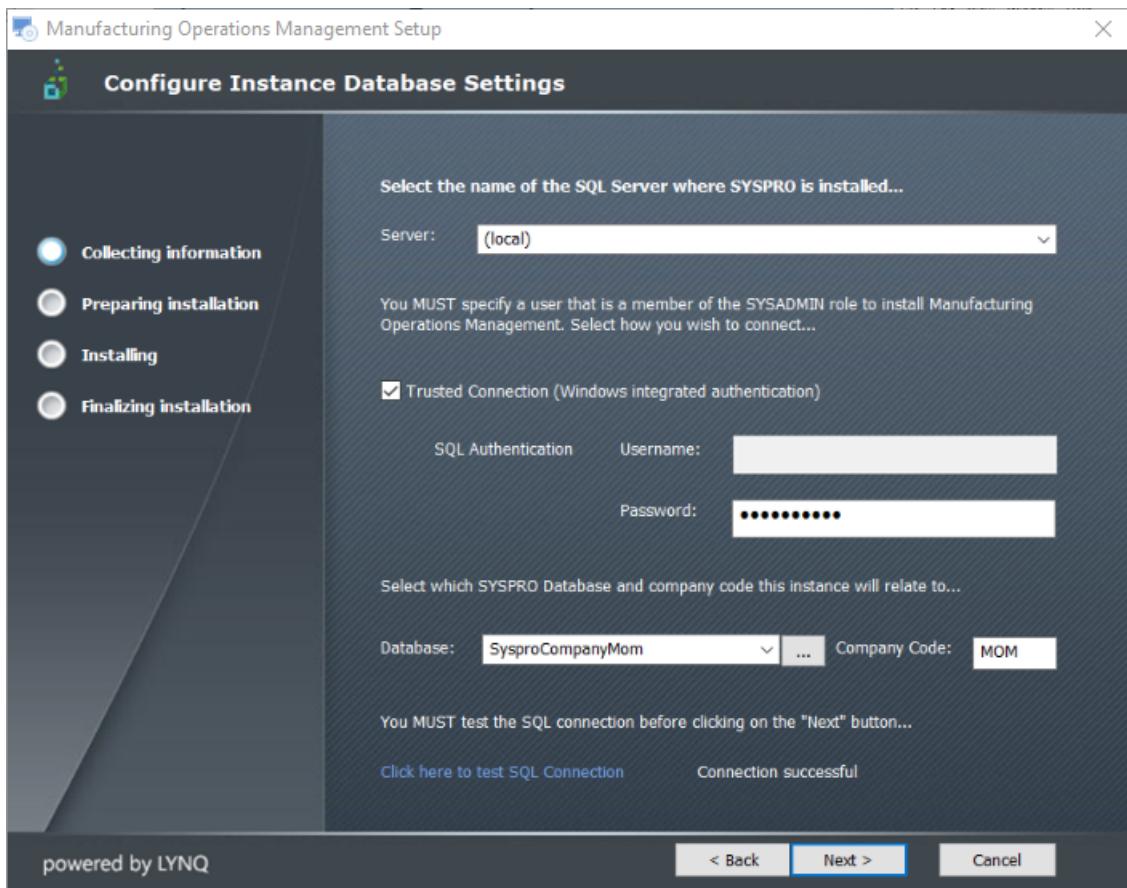
12. Select **Next >** to continue.

 **Note:** If you want to configure a demonstration instance you would select **Yes**.

The **Select Manufacturing Operations Management Components** window is displayed.



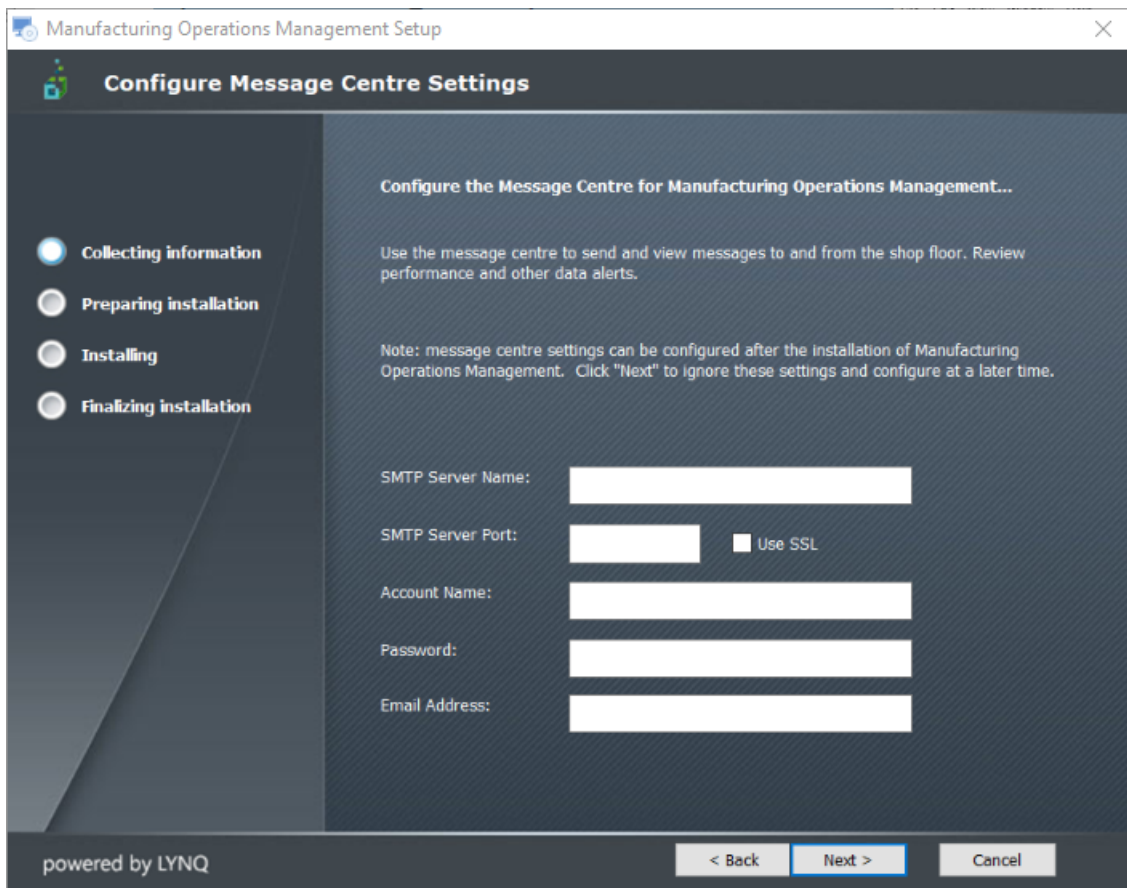
13. All components need to be installed. Select **Next >** to continue.
The ***Configure Instance Database Settings*** window is displayed.



14. Enter the configuration information, test the connection and then select **Next >**.

As this is another instance of MOM you will need a different SYSPRO Database and Company Code.

The **Configure Message Centre Settings** window is displayed.

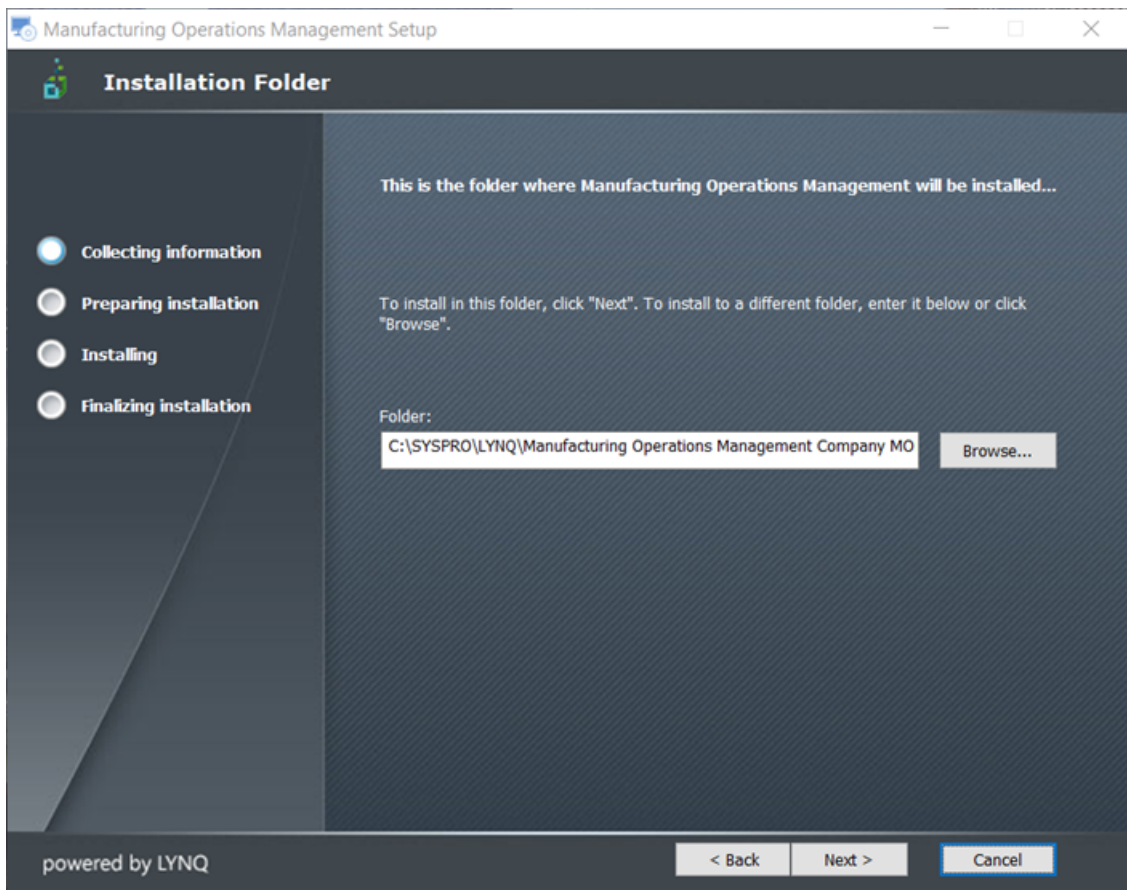


15. If you want to send messages to and from the **Shop Floor** enter your **SMTP** details and then select **Next >**.

For our purposes you will not be sending messages to and from the Shop Floor. Select **Next >** to continue.

You will be able to set up SMTP changes to this later if required.

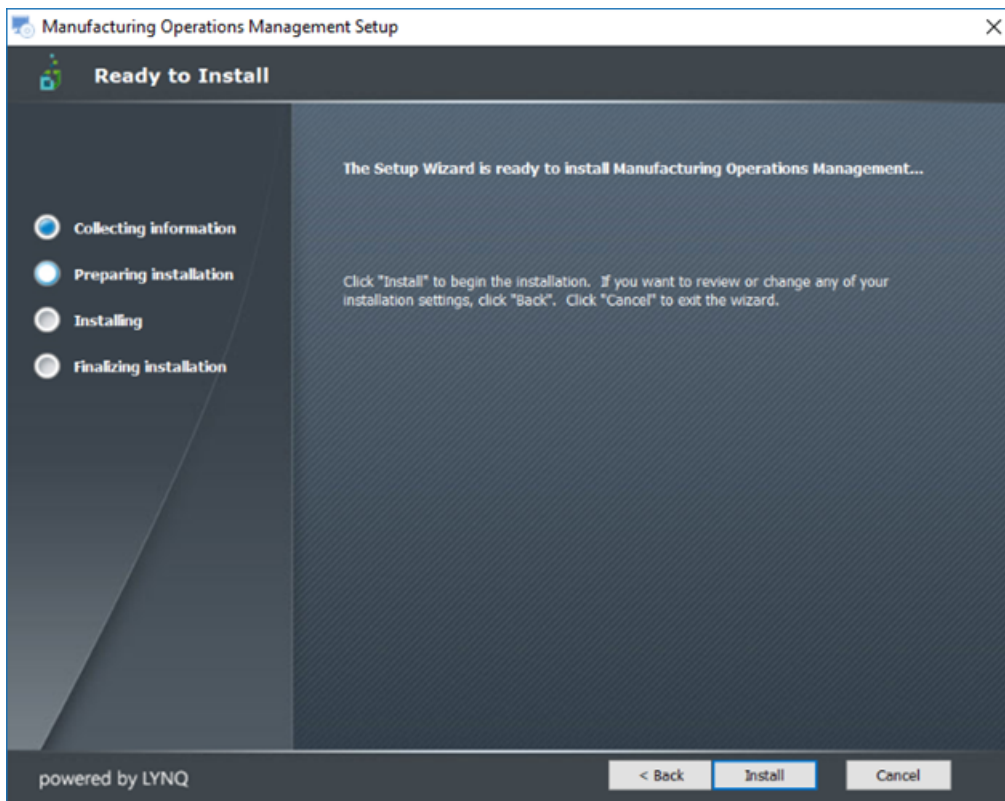
The **Installation Folder** window is displayed showing the new folder name.



16. Browse for the folder where you want to install **MOM** and select **Next >** to continue. It is recommended to use the default folder.

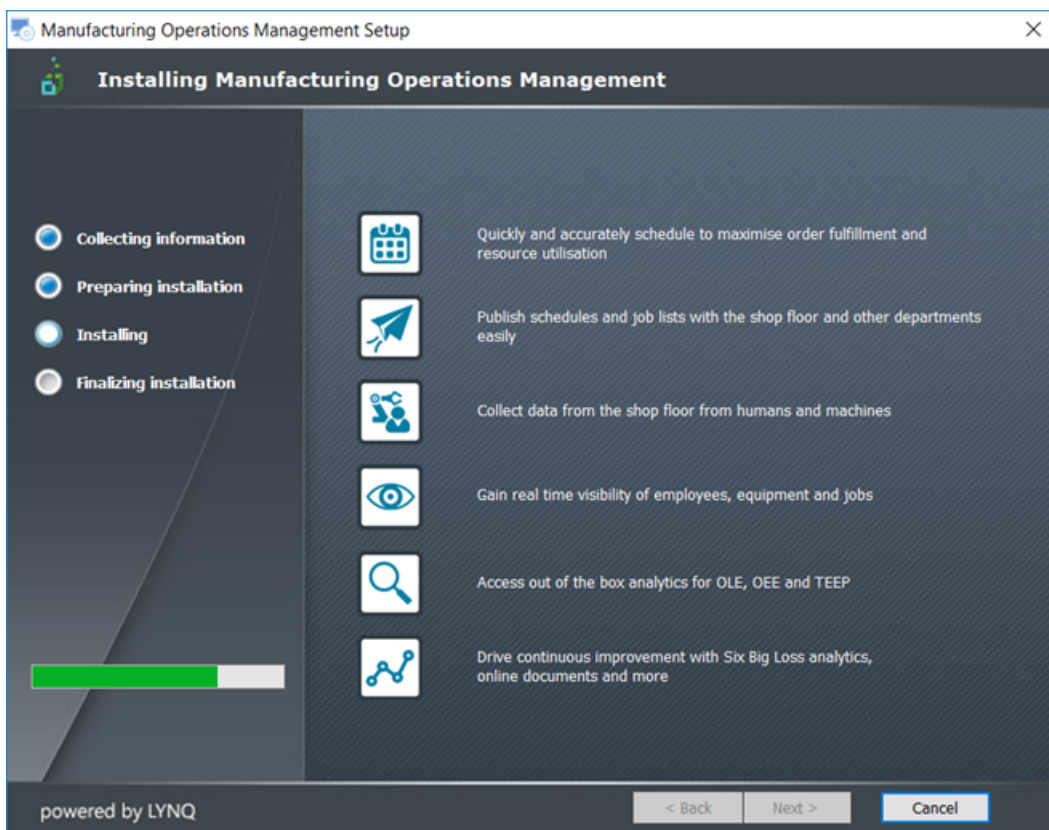
 **Note:** The **MOM installation Folder** is unique to each company.

The **Ready to Install** window is displayed.



17. Select **Install**.

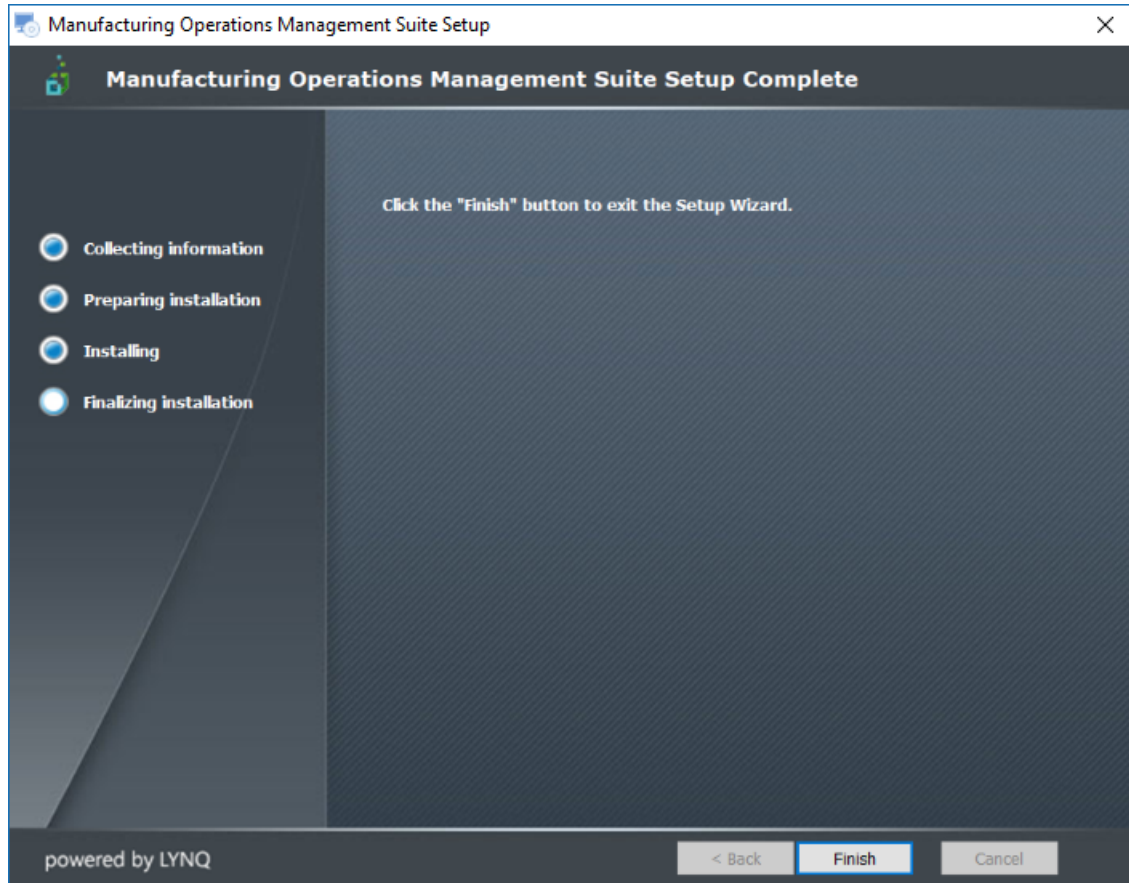
The *Installing Manufacturing Operations Management* window is displayed during the install.



The **Manufacturing Operations Management Setup Complete** window is displayed.

18. Select **Finish**.

The **Manufacturing Operations Management Suite Setup Complete** window is displayed.



19. Select **Finish**.

The **MOM Web Site** will open with a URL **localhost/MOM_MOM**. The last three characters represent the **SYSPRO Company ID**.

 **Note:**

You need complete the following tasks in MOM:

- Configuring a Profile
- Importing and Activating Seats.

Mapping a new instance of MOM to SmartLYNQ

The following steps describe how to map MOM back to SmartLYNQ.

1. Open the **MOM Web Site**.

Enter `localhost/MOM_[Cold]` into the URL address line.

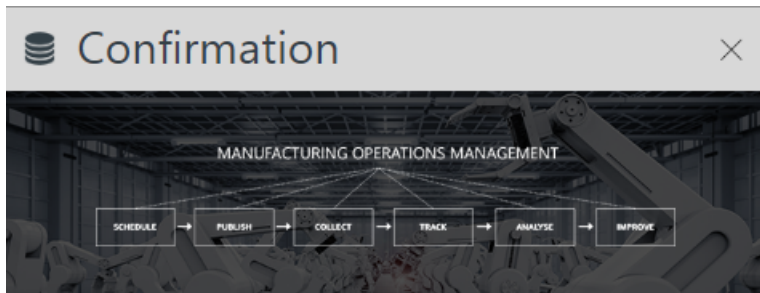
2. Select **Settings** from the top right hand corner.

The **Settings** window is displayed.

3. Select **Test** and then browse and select the **Instance** and then **Save**.

Browse and select **Syspro Company [Cold]** at the **Instance** field. Select **Save**.

The **Confirmation** window is displayed.



Changes in this screen will require
restart of the application. Please
confirm...

OK

Cancel

4. Select **OK**.



Note: MOM needs to be restarted because you have amended the core setup of the application.


The **MOM Restarting** window is displayed.

Restarting



Restarting

Application is restarting. Please wait...

-  **Note:** When you install more than one MOM company each one will have a different instance number.

Linking a new database from Visual APS to MOM

The following steps describe how to add a new database connection from Visual APS to MOM.

1. Load **Visual APS**.

The **Visual APS** home page is launched.

Planning Manager | Visual APS

FILE HOME MANAGE PLAN SCHEDULE REVIEW REPORTS VIEW

Company Settings Open Company Close Close All Open MOM Help Online Help

Welcome (local) | SysproCompanyMom -

Sub Jobs -3

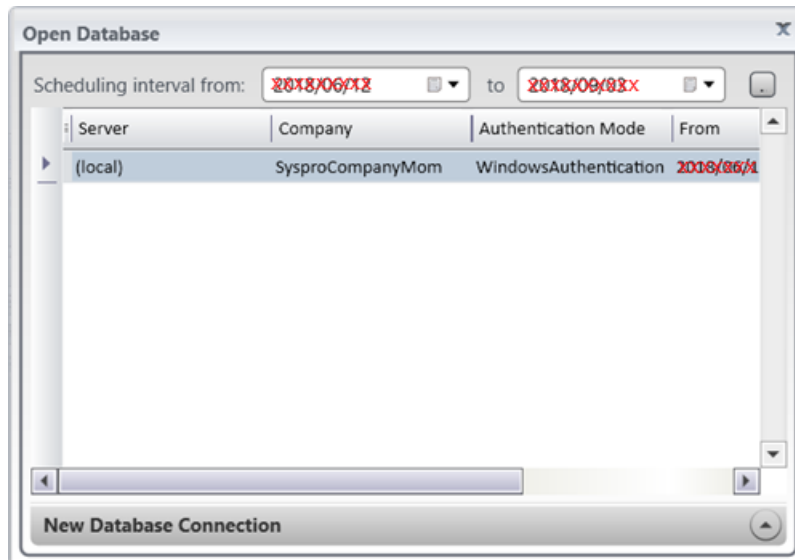
Drag a column header here to group by that column.

	Attach	On Hold	Materials?	Operations?	Scheduled?	Pinned?	Marker	Job Class	
		N	X	●			○		0
		N	X	●			○		0
		N	X	●			○	QUOT	0

2. Add a new Company Database Connection.

Select **File>Open>Company** from the top left hand corner of the window.

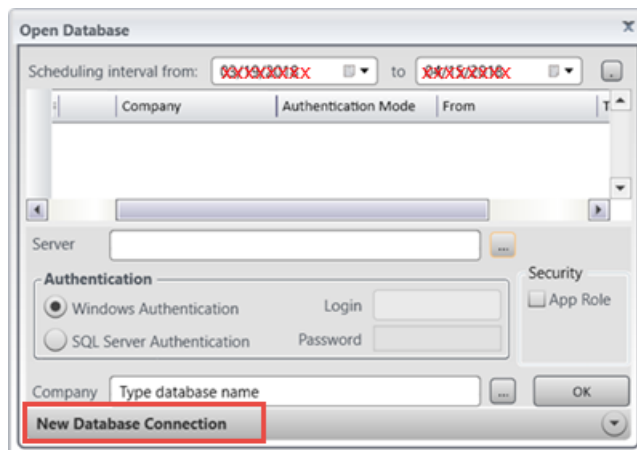
The **Open Database** window is displayed and shows the connection to the database you have selected during the install.



3. Add a new database connection..

Select **New Database Connection**.

The **Edit Settings** window is displayed.



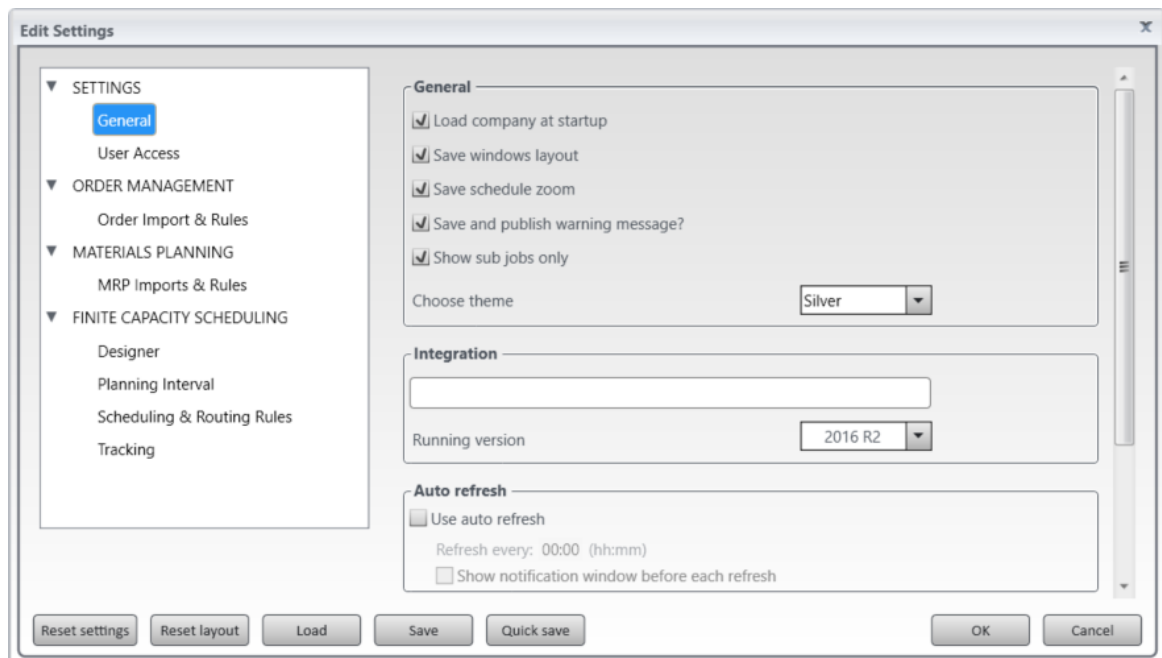
4. Enter the information required for the **New Database Connection**.

Browse and select the **Server Name**. You can leave the **Authentication** method as **Windows Mode**. Browse at the **Company** prompt and select the required database.

 **Note:**

The **App Role** is related to how **SQL security** is assigned to a user. It is only required if the **Login** (either Windows or SQL) does not have rights via a database or server role i.e. (data reader, data writer, database owner, sysadmin). When using the **App Role**, the Login (either Windows or SQL) requires minimal security. The **Login** must be mapped to the SYSPRO Database **Public Role**. **App Role** is the most secure form of assigning security to users.

5. Select **OK**.
6. Select to open the new database instance.
Highlight the new database connection.
7. Add the integration from Visual APS to the new MOM Database.
Select **File>Company Setting** from the top left hand corner of the window.



8. Enter the URL for the new MOM Instance.
For Example: `http://localhost/MOM_[Co-Id]`
9. Select **OK**.

Troubleshooting

Installation Problems

Problem	Solution
During installation of any features, the Server field fails to return a list of SQL servers.	Check to see whether the SQL Browser Service is running. The installer will accept a server name that is typed in manually.
During installation I specified the option to use a trusted connection. However, the installer fails to detect that the trusted connection has SYSAdmin rights.	In cases where the SQL server has been renamed, detection of SYSAdmin rights may not function correctly. To work around this known issue, use a SQL account that has SYSAdmin rights.
After installing Visual APS Server feature, the Visual APS Client does not automatically open the company I specified as either Production or Sandbox.	When using SQL Authentication , the company will never open automatically. You must provide your SQL account details by selecting Company Open.
During the installation of Visual APS Server , I receive an error that a duplicate record has been detected and I cannot progress with the installation.	Visual APS Server cannot be installed against a company where there are duplicate records. The most common reason for this is where there are duplicate records based on upper/lower case values. For example, a Work Center record called PAINT and paint would be considered a duplicate. Duplicates must be removed from SYSPRO to progress with the installation. SYSPRO is case sensitive whereas Visual APS is not.
When launching Visual APS for the first time after the installation, the application does not appear to render the interface correctly. I cannot see the APS toolbar.	This may happen if the Crystal Runtime components have been installed correctly. You can manually install the crystal runtime (CRRedist2008) from the \Manufacturing Operations Management Suite \Setup Files \ Visual APS Server folder.
During the installation of Visual APS Server , I specified the same SYSPRO company for both Production and Sandbox. Will this cause any issues?	No, it will mean you will have 2 database connections configured in Visual APS for the same company. The duplicate connection can be easily removed by clicking on File > Company Open.
During the installation of the Manufacturing Operations Management (MOM) Web Site , I receive an error that Planning Manager has already been installed.	When installing the MOM Web Site, the installer will check whether the selected SYSPRO company has LYNQ objects present. If LYNQ objects are present this error will be returned. You must install MOM against a database that has not previously had MOM installed. A SQL Script has been included with the installer should LYNQ objects need to be removed. The script can be found in the \Manufacturing Operations Management Suite Setup Files \ Support Files folder. The name of the script is: Remove_Planning_Manager_Objects.SQL
After installing the Manufacturing Operations Management (MOM) Web Site , the website takes a minute or two to start up. Are there any issues with the installation I should be concerned about?	No, the first time the site ever loads, some actions are performed in the background. This is normal behavior. The next time the site loads it should be instant.

Problem	Solution
After installing the Manufacturing Operations Management (MOM) Web Site , I am unable to import equipment (machines) from the Start Up Configuration Screen or from the User Maintenance screen. The machines list is empty.	You must first import machines into Visual APS . The MOM Web Site will read information from Visual APS tables and not directly from SYSPRO Work in Progress at this point.
After installing SmartLYNQ , the Web Site fails to start up. I receive a (405) method not allowed error.	This error is returned if HTTP Activation is not installed as part of the Server Feature .NET Framework > WCF Service. Install this feature on the Web Server and re-open the SmartLYNQ Web Site to finish the installation.
When installing the Manufacturing Operations Management (MOM) Web Site I receive an error that the specified installation path already exists.	When installing MOM, you just install the application into an empty folder. For example: MOM\Visual APS MOM\Manufacturing Operations Management MOM\SmartLYNQ. Do not install all features into the same location i.e. \MOM.
When using MOM for the first time after installing the application, I am receiving errors that certain LYNQ SQL Views do not exist.	This could happen if you attempt to use the application without either accessing the User Maintenance > Seats screen or without clocking into the Workbench.
When executing the integration from SmartLYNQ , I am getting an error regarding the company not being licensed for e.Net Runtime .	You must ensure that the runtime license has been imported into SYSPRO .
When clicking on the Workbench , I am getting a default setting or object reference error.	You must ensure that you have loaded the Build 3.8 profile against the MOM Website settings. The profile holds the default settings that allow you to use the workbench without having to configure it from scratch.
After installing SmartLYNQ , the test connection for the SYSPRO Settings fails with the following message: The underlying connection was closed. An unexpected error occurred on a receive.	Check that you have the correct basedir directory against SYSPRO > e.net solutions registry entry.



Epilogue

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